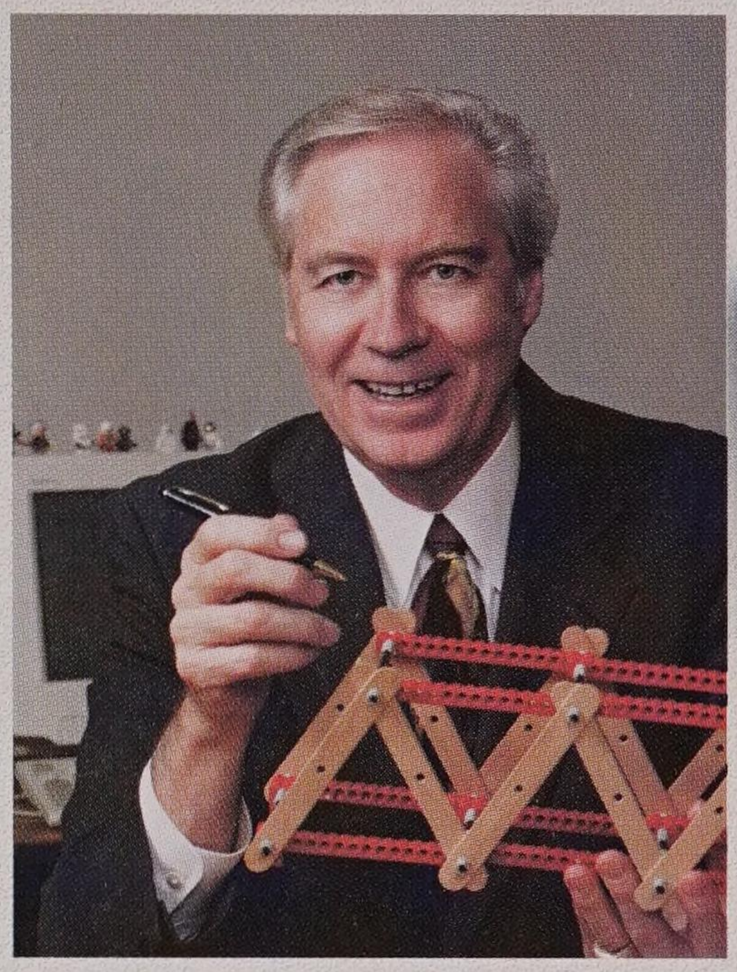
2001

Because Young Minds Matter

PITSCO LEGO dacta

PARTNERS IN INNOVATIVE EDUCATION



Dear Teacher Friend,

Thank you for taking the time to look through this catalog, which is the result of a partnership between Pitsco and LEGO Dacta – two education companies that share the ideals of innovation, quality, and customer service. As you turn through these pages, I know you'll find unique solutions that engage and motivate your students.

As a former teacher, I'm very excited we can offer students the opportunity to put their hands on subjects like Robotics, Structures, and Flight in ways they've never before experienced.

Our new partnership *is working to put students and teachers first*. You reap the benefits by getting the best solutions we have to offer – grouped by topic and correlatable to state and national standards.

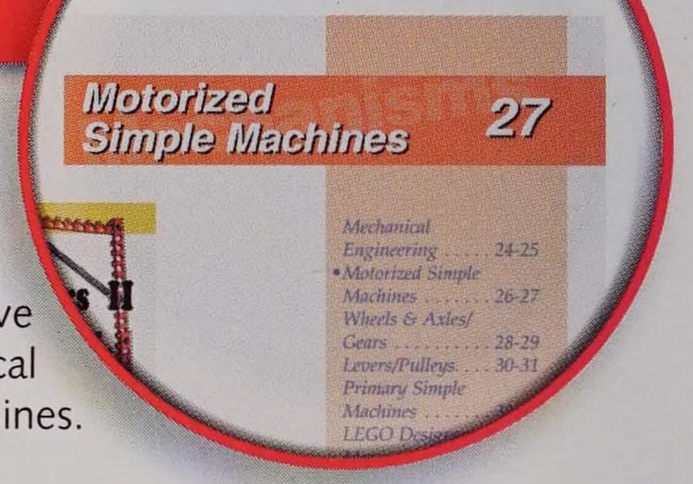
Thank you for all the work you do to make students successful, motivated learners. You make a difference in the classroom every day – *Because Young Minds Matter.*

Have a great 2001!

Harvey Dean
President

1

We have incorporated teacher requests and input into this catalog to provide easy browsing and prompt location of specific solutions. There are seven color-coded sections at the page number, and five sections named for one of the topical areas typical of science, for example, Motorized Simple Machines.



2

Within each section you will find detailed classroom pictures showing students engaged in hands-on, minds-on learning activities with the products featured in that section. Many informative product shots are also included throughout the catalog.

3

Located in the lower-right corner of many pages, the Ideal Classroom Setup is another great feature. This information provides a ready reference regarding equipment, supplies, and support items needed for 24 students to conduct the activity described in the classroom picture. Product numbers, page numbers, and restocking numbers are listed for your convenience.

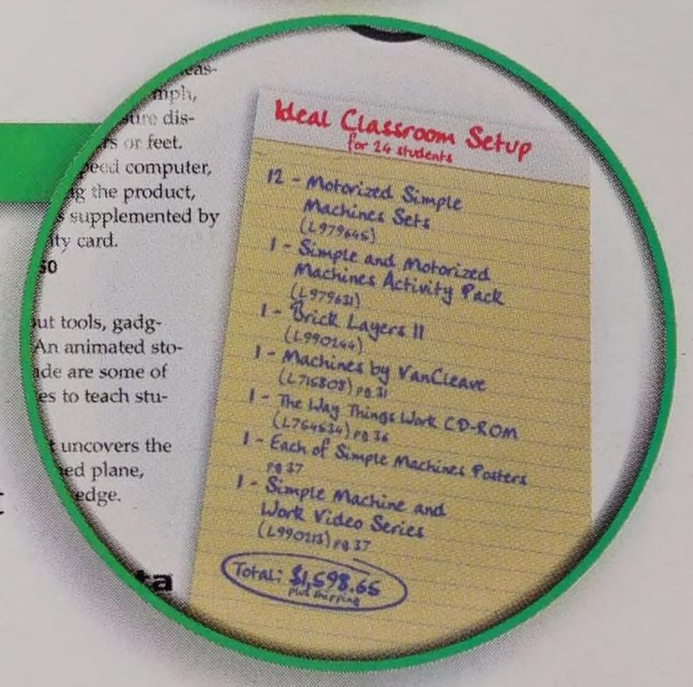


Table of Contents

Robotics 2-23

Imagine it! Build it! Teach it! All using Pitsco LEGO Dacta products! Everything from simple robots to computer-programmable autonomous robots – it is all here!

Mechanisms 24-47

From simple to complex, machines are an integral part of our world. Look for great products to stir the imagination of your students and help them learn about machines and inventions!

Energy 48-63

Renewable energy, alternative energy, work, power, electricity, lasers, pneumatics . . . if it has to do with energy, it's in here! Great hands-on activities for this important topic that involves our future!

Structures 64-73

You live in them, drive over them, and marvel at them . . . structures! Whether they are bridges, buildings, or towers, we have the activities and resources to bring your classroom alive with this topic!

Flight 74-85

From the heart-thumping bottle rocket countdown to the lofty, serene flight of a hot-air balloon, we have the hands-on, minds-on activities to set your students' minds to flight!

Early Learning 86-96

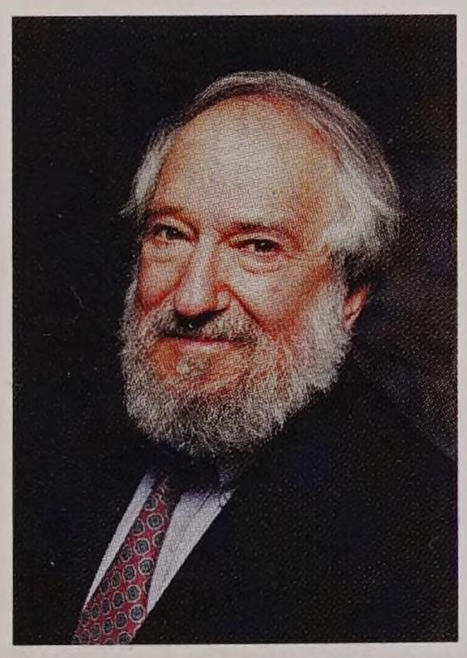
Get hands-on activities started in your school at an early age with our great K-2 products. These products work great in both thematic classroom and center approaches!

Tools, Resources, & Parts 97-110

We have all the spare parts, supplies, and resources you could imagine gathered together for you! No matter if you're looking for yellow LEGO bricks, blue straws, giant toothpicks, or little LEGO people, you can find them here!

Index 114-123

Our user-friendly index is arranged to enable you to find the products you are looking for in quick fashion. Look for your favorites by product name, type, or manufacturer!



Dr. Seymour Papert

Dr. Seymour Papert is the father of the constructionist theory of learning. Beginning with a close collaboration with Jean Piaget in Geneva and continuing for more than 30 years at MIT, he has devoted most of his life to inventing new ways for children to learn by actively creating meaning for themselves in completing serious projects. These include the LOGO computer language and the idea of connecting LEGO bricks to computers. Books he has authored include: *Mindstorms: Children, Computers, and Powerful Ideas*, *The Children's Machine: Rethinking School in the Age of the Computer*, and *The Connected Family: Bridging the Digital Generation Gap*.

Papert is known as a mathematician, as a computer scientist, and as co-founder, with Marvin Minsky, of the MIT Artificial Intelligence Laboratory.

Easy-to-Use Information Buttons

New

You'll see this icon on innovative, new products available from LEGO Dacta and Pitsco. We're constantly developing and searching for great classroom tools that keep students and teachers on the cutting edge.

EXCLUSIVE

This icon appears with great stuff that you can't buy anywhere else, meaning we are the sole source. These products were designed to meet your specific classroom needs, built to our exacting specifications, and backed by our excellent customer service.

Be$t Buy!

When you see the Best Buy icon, you will know we have made a special package for you. Many times it will be a complete system – the easiest way to get started with an activity. All the time, it will mean you are saving money by not buying individual components.

Professional staff development training for Pitsco LEGO Dacta products is available in most states. Call for details.
1-800-362-4308

2 ROBOLAB Overview

ROBOLAB software is based on the powerful LabVIEW software developed by National Instruments for analyzing and computing the results of industrial applications. Tufts University has worked in partnership with LEGO Dacta to compile the teacher's guide.

ROBOLAB is a powerful tool for learning. Combining creativity, design, logic, and problem-solving skills, students use ROBOLAB to meet challenges with today's technologies.

ROBOLAB is a unique blend of software (ROBOLAB *Programmer* and *Investigator*), hardware (*RCX* brick and transmission tower), sensors, LEGO Dacta construction sets (for a variety of applications), and your computer (Mac or PC). Students model real-life mechanisms during problem-solving activities with ROBOLAB.

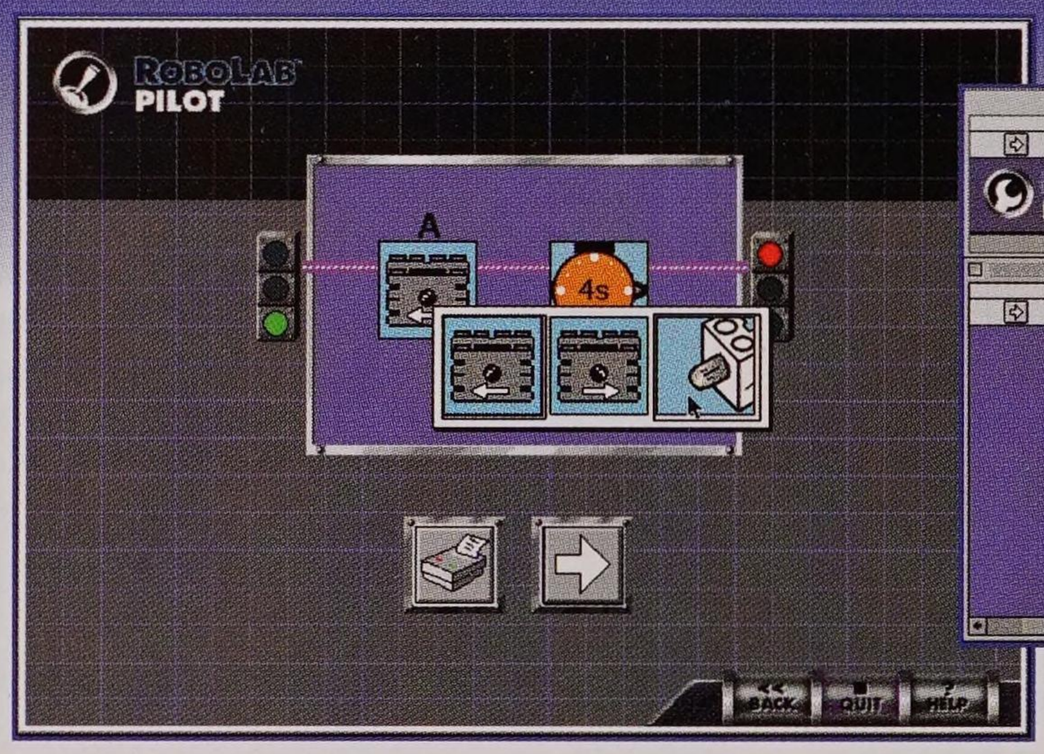
ROBOLAB software is as simple or as advanced as you want it to be. The ROBOLAB *Programmer* is the beginning point of the software, with "Pilot" and "Inventor" modules to graphically aid in the control process. The advanced portion of the software, ROBOLAB *Investigator*, provides an exciting and graphical method of sensing and data logging for advanced control possibilities.

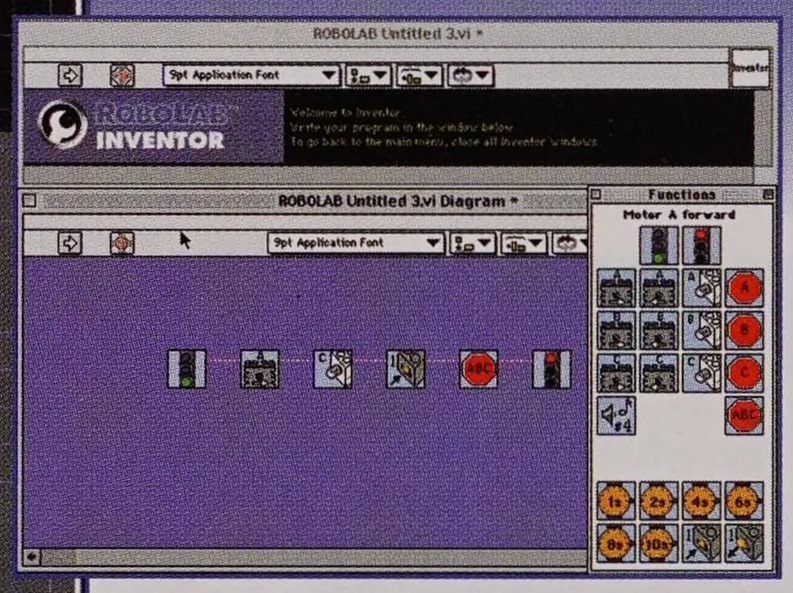
Successful Programming

The ROBOLAB software incorporates a flowchart approach to programming. A gentle step-by-step progression from beginner to advanced level perfectly accommodates individual abilities and lays the foundations for further class projects. A detailed online help system is also included, enabling students to find the answers to many questions themselves.

ROBOLAB PROGRAMMER

For ordering information for ROBOLAB *Programmer* see page 15.





Note: ROBOLAB* Programmer *software does not include ROBOLAB* Investigator *software described below. To get both pieces of software, order the ROBOLAB* Investigator *software. See page 12.

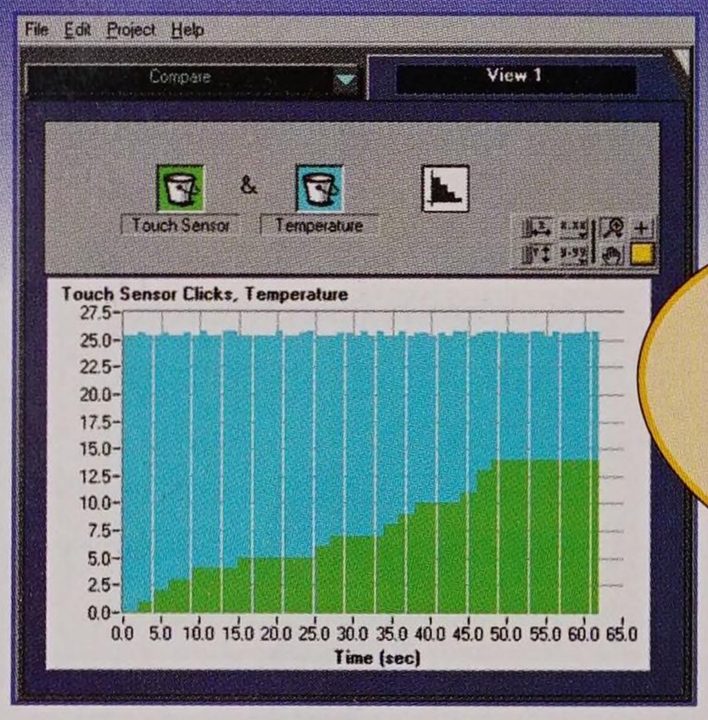
The four levels of "Pilot" serve as an introduction to ROBOLAB programming. Building on each other, the levels make it easy for users to become familiar with available options before progressing to the next stage.

Follow "Pilot" with "Inventor" programming, where picture icons are selected from the palette and placed in the program window. By stringing together different combinations of icons, you can create a personal robot program. The four "Inventor" levels range from simple to advanced and present seemingly endless programming possibilities.

ROBOLAB INVESTIGATOR

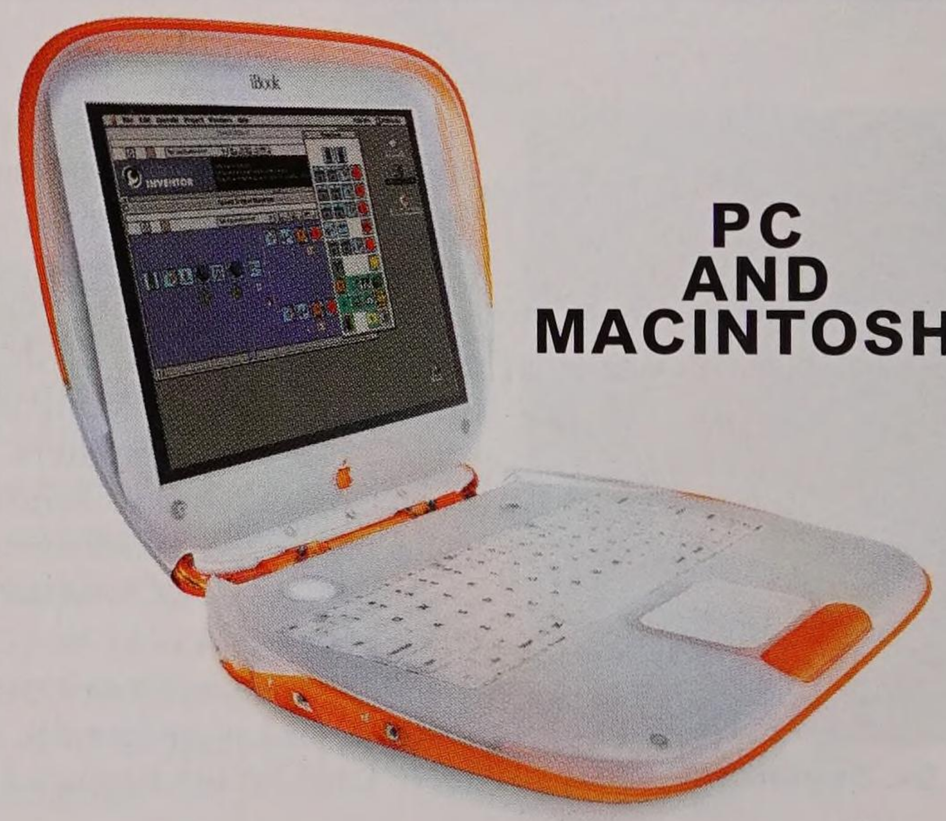
For ordering information for ROBOLAB *Investigator* see page 12.

Note: ROBOLAB* Investigator *software includes ROBOLAB* Programmer *software described above. To get the complete software package, order the ROBOLAB* Investigator *software. See page 12.



If you're not sure which ROBOLAB software is right for you, buy the ROBOLAB *Investigator* featured on page 12. It's got it all!

ROBOLAB *Investigator* takes the ROBOLAB *Programmer* and extends its capabilities to data logging. *Investigator* allows the collection, storage, and display of data obtained in real time from a variety of sensors. This data can be analyzed, used to control other *RCX* functions, or used to provide a graphical representation.



PC AND MACINTOSH!

Call Toll Free!
800-362-4308

ROBOLAB

Software for Teachers and Students

- *ROBOLAB Overview 2-3*
- *ROBOLAB Starter System 4-5*
- *Team Challenge. 6-7*
- *Cities & Transportation/ Amusement Park . . . 8-9*
- *Intelligent House . 10-11*
- *ROBOLAB Investigator 12-13*
- *Red Rover, Red Rover 16-17*
- *Control Lab. 18-19*
- *Brutus 20-21*

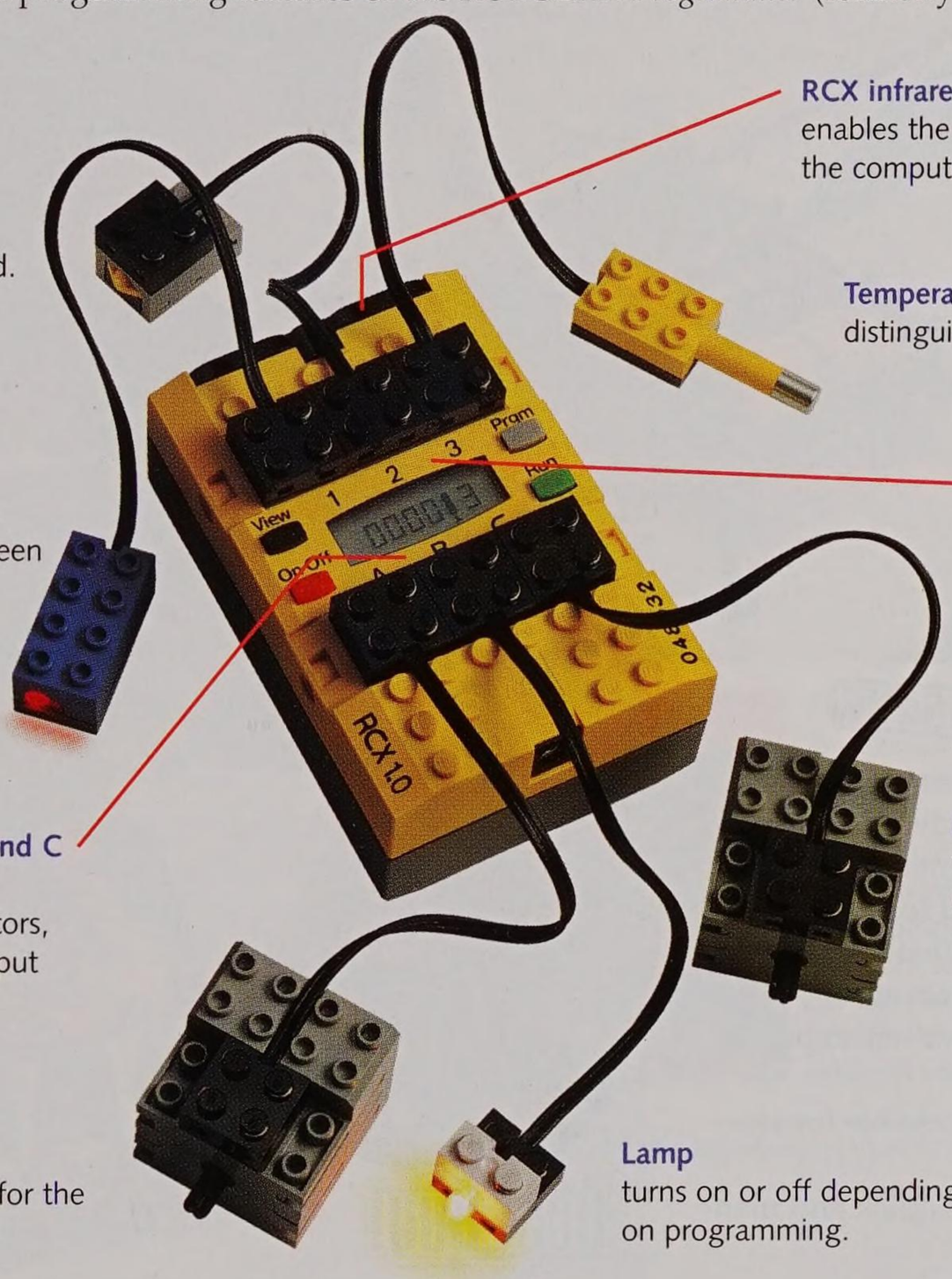
Using the *RCX* brick, young engineers can build a range of specific models or come up with their own inventions before creating programs on the computer, downloading them to the *RCX* brick, and conducting the ultimate test of a model's programmed behavior.

The *RCX* microcomputer is the heart of the ROBOLAB system. It receives programs from the ROBOLAB software (PC or Mac) via an infrared computer link, storing up to five programs at a time. The *RCX* then runs the programs when activated.

The *RCX* is great for modeling and experimenting with robotics, machines, vehicles, manufacturing systems, . . . anything that can be controlled using inputs and outputs!

Up to three inputs can be used by the *RCX* to sense events in its environment, which in turn can determine what the three outputs will do to react to the sensing data.

A great new ROBOLAB software – *Investigator* – provides even more sensing power by providing data logging along with programming features of the ROBOLAB *Programmer* (formerly known as ROBOLAB 1.5).



Touch sensor
turns the motors on or off when activated.

RCX infrared eye
enables the *RCX* brick to communicate with the computer via the infrared transmitter.

Temperature sensor
distinguishes between hot and cold.

Light sensor
allows the *RCX* brick to differentiate between light and dark.

Input Ports 1, 2, and 3
provides connection points for sensors.

Output Ports A, B, and C
provides connection points for LEGO motors, lights, and other output devices.

Motor
works independently.
(When one motor is turned off, the other motor continues.)

Motor
provides movement for the *RCX* model.

Lamp
turns on or off depending on programming.

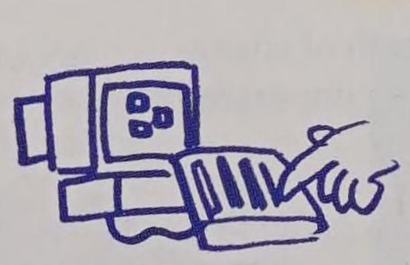
STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site:
www.pitsco-legodacta.com/html/standards.html

For more information about ROBOLAB check our Web site at www.pitsco-legodacta.com

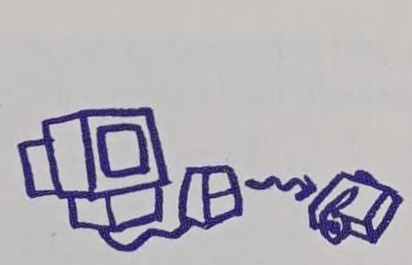
Build!

Study the activity cards and construct a robot using the *RCX* brick and the bricks from one of the ROBOLAB sets. Add sensors, motors, and lamp, and your model is ready for programming.



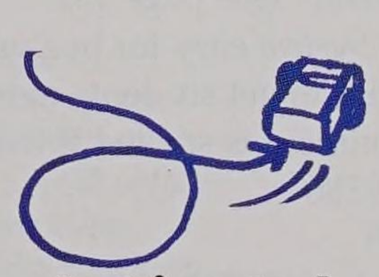
Program!

Choose from among the eight different programming levels in the ROBOLAB software, and design a program by selecting a series of command icons.



Download!

Click the mouse and instantly download your program from the computer to the *RCX* brick via an infrared transmitter.



Activate!

Your *RCX* robot is ready for action. Run the program and see how the motors and sensors respond to the programmed commands.

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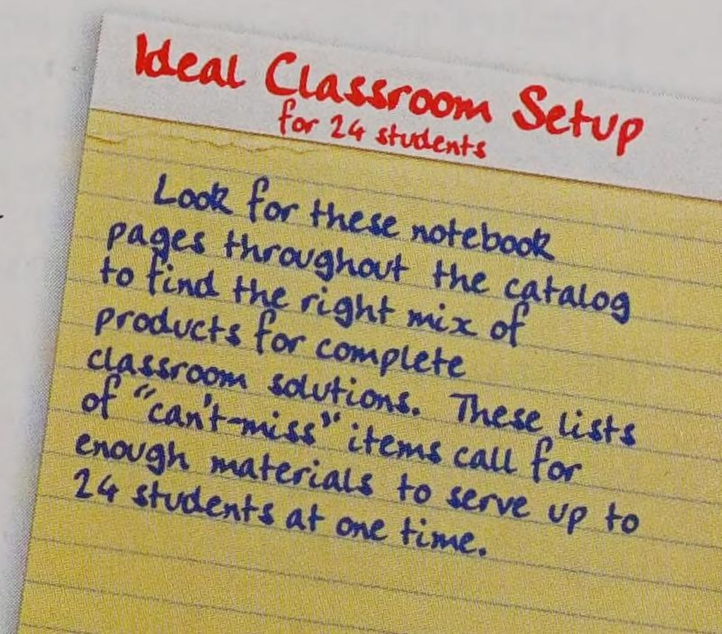
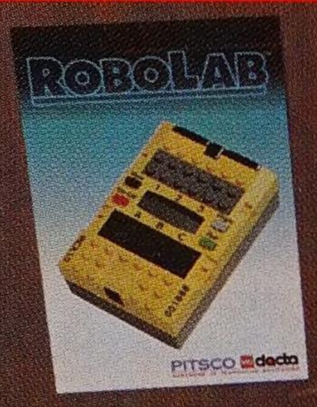


4 ROBOLAB Starter System



ROBOLAB STARTER SYSTEM #990084 EXCLUSIVE

The ROBOLAB *Starter System* gets you started in turning your elementary and lower middle school classrooms into robotic design laboratories.

- System is designed for four groups of two to three students each.
- Teaching approach and student progressions are detailed for each group.
- Activities build upon previously learned concepts as students explore and apply basic robotic fundamentals in a variety of configurations.
- System includes a diverse set of models and activities that will capture the interest of ALL students.
- Many motors, lights, sensors, and resource bricks are accessible for student innovations in robotics.
- Complete matrix of storage, colors, and sorting supports quick and manageable classroom use.
- Includes ROBOLAB *Programmer* software (see page 15).

Not only is the ROBOLAB *Starter System* easy for beginners, but it also provides a wealth of engaging, hands-on, problem-solving activities to get students motivated about robotics and, more importantly, about learning. Learning in this environment is spelled F-U-N!

- 1 ROBOLAB *Starter Building Set* #979780
- 4 *RCX* programmable bricks #979709
- 4 Infrared Transmitter and Cable Packs #979713
- 1 ROBOLAB *Programmer* Software and Site License #900060
- 1 Robotic Concept Guide #900041
- 1 ROBOLAB Teacher's Guide #900052
- 1 Activity Pack for #979780

L990084—$999

Maximize the benefit of the ROBOLAB Starter System! Introduce your students first to the mechanics behind robotics with the Motorized Simple Machines Set on page 26.

FreeFax™ Orders!
888-534-6784

ROBOLAB Starter System

EXCLUSIVE

LEGO MINDSTORMS FOR SCHOOLS

ROBOLAB
Overview 2-3
• *ROBOLAB*
Starter System 4-5
Team Challenge. 6-7
Cities & Transportation/
Amusement Park . . . 8-9
Intelligent House . 10-11
ROBOLAB
Investigator 12-13
Red Rover,
Red Rover 16-17
Control Lab. 18-19
Brutus 20-21

ROBOLAB STARTER BUILDING SET #979780

The ROBOLAB *Starter Building Set* includes four individual group sets and a large number of resource bricks. Each group set is used to build a different model that has four built-in levels/challenges! The elements for each group set have their own sorting tray and are color differentiated to make management quick and easy. Each group set requires an *RCX* programmable brick, which is not included in the ROBOLAB *Starter Building Set*.

Using motors and sensors from the group sets with the resource set, you can also build a fifth model, the famous "Table Edge Finder," also known as the Torbot!

Contains more than 1,600 elements, including:

- 3 gear motors
- 1 micro motor
- 4 light bricks
- 3 light sensors
- 4 touch sensors
- 14 wires (including two really long ones)
- 5 full-color building instructions

The *RCX* brick and ROBOLAB software are sold separately.

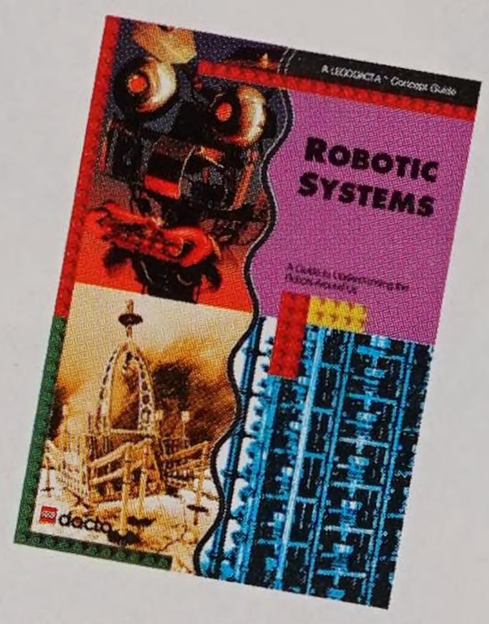
L979780—$330

ROBOLAB ACTIVITY PACK

L909780—$30

SPANISH VERSION

L209780—$30



ROBOTIC SYSTEMS CONCEPT GUIDE #900041

A detailed and easily digested introduction to robotics and robotic systems.

L900041—$17.50

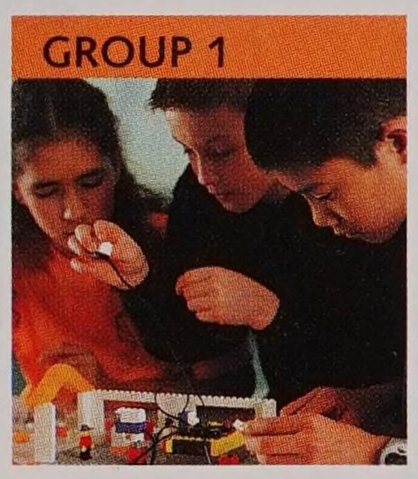
STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

Colorful classroom management

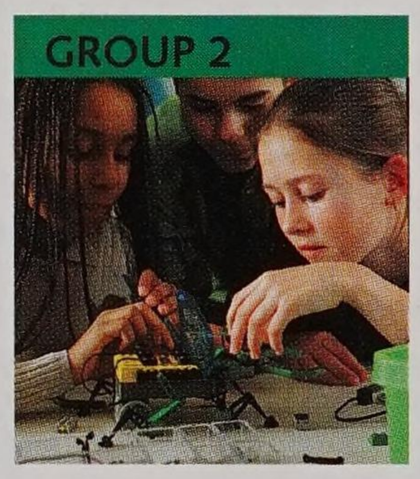
Individual models and groups of students can be easily managed with the aid of practical color codes that give teachers a rapid overview while ensuring all the necessary equipment is present before a lesson begins. The ROBOLAB *Starter Set* includes:

- 5 color-coded building instructions
- 6 color-coded element surveys
- 6 sorting trays



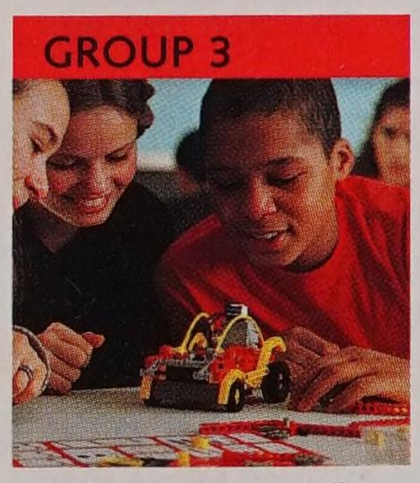
The Home
A wake-up call, a bed that moves into an upright position, and a bedside lamp that turns on when it gets dark outside – students can learn to run the perfect electronic household with this tabletop model.

For this model the following elements are used:
- 1 micro motor
- 1 light brick
- 2 light sensors



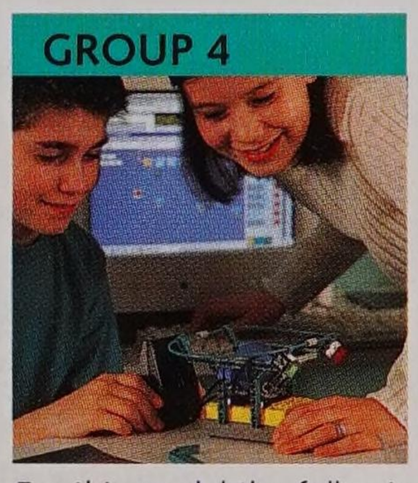
The Bug
Use touch sensors to make the model walk in different directions – the bug is at your command. Build and program your bug model in fun ways, and put a range of behavioral patterns to the test.

For this model the following elements can be used:
- 2 gear motors
- 2 touch sensors



The Car
An intelligent vehicle that can be programmed to follow any route mapped on the floor. Activate the touch sensor to make it stop, start, reverse, or flash its light. The car will fascinate and amaze.

For this model the following elements can be used:
- 1 gear motor
- 1 light brick
- 1 touch sensor



The Gadget
Ideal for the sporty, the gadget detects objects that fall onto it and throws them back. Make your own game of mini basketball or crazy golf, and test how the gadget reacts.

For this model the following elements are used:
- 2 light bricks
- 1 touch sensor
- 1 light sensor

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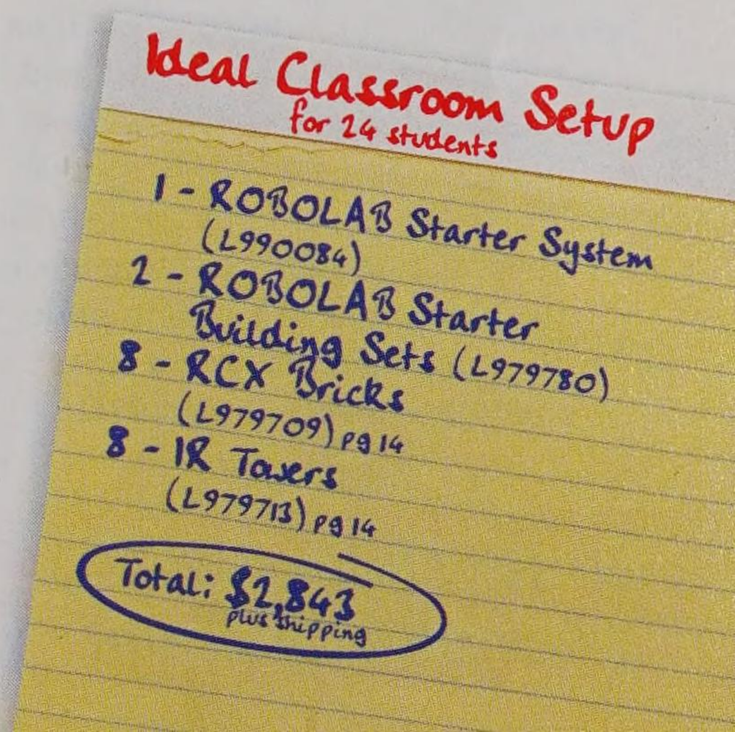


6 Team Challenge

ROBOLAB TEAM CHALLENGE

ROBOLAB Team Challenge is a great way to get your middle and high school students motivated in robotic activities. Using the *Team Challenge Activity Pack*, the team is divided into two groups: the "Design and Build" group and the "Program and Test" group. Within these two groups, each group member is assigned a role with specific responsibilities, according to the needs of the challenge:

- A Team Manager, who oversees activities, makes sure the project proceeds on schedule, and communicates with the teacher, if necessary.
- A Communications Specialist, who maintains the team's journal, markets the competition, and addresses team questions to the Team Manager.
- A Materials Specialist, who keeps track of hardware, software, bricks, and building materials; distributes materials to other team members; and keeps track of inventory.
- An Information Specialist, who takes charge of all incoming information (literature and worksheets) and reads aloud or summarizes this information for the team.

*** For introductory activities for pairs of students, use the *Team Challenge Introductory Activity Pack*.**

OBJECTIVES:

- To build teamwork skills with a real-world simulation of robotics and robotic systems
- To enable students to apply their knowledge of science and technology in a meaningful and interesting context
- To give students an opportunity to improve their designing, building, and programming skills
- To challenge students by means of classroom competitions
- To enable students to experience, in a nonthreatening way, the challenges of working under time and material constraints
- To show students how a team's success depends on the team members' ability to cooperate

BENEFITS:

To the teacher:

- Introduction of teamwork skills with easy classroom management techniques
- Opportunity to reinforce and extend students' knowledge of science and technology
- Full attention and motivation of students
- A difficult topic made accessible and easy to teach
- Minimum preparation time, due to structured activities and copy masters

To the students:

- A fun and challenging way to learn both teamwork and robotics
- No student is left out – each has a specific role to play
- Student-directed, so students learn the decision-making process, and success is up to them

Order Online!
www.pldstore.com

Team Challenge

New!
Use LEGO Designer software to design and test your models before building them!
See pages 34-35 for more details.

The *Team Challenge Set* contains 715 items, including the following:

- 1 *RCX* brick
- 1 infrared transmitter with cable for PC and Mac
- 2 gear motors
- 1 light sensor
- 2 touch sensors
- 6 wires
- 1 full-color building instructions
- 1 sorting tray
- 1 element survey
- 1 sturdy plastic storage box with transparent lid

TEAM CHALLENGE BUILDING SET #979790

Ideal for introducing older students to the art of cooperation and team management. The *Team Challenge Building Set* enables groups of students to simulate real-life robotics and robotic systems. Each member of the group assumes a role and works with the others to solve the set assignments. Time and material constraints add to the challenge. ROBOLAB software sold separately.

L979790—$199

EXCLUSIVE

TEAM CHALLENGE ACTIVITY PACK #909790

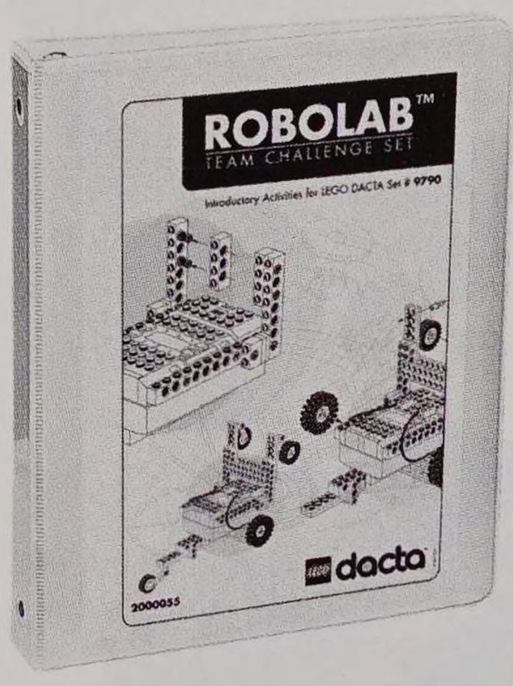
This activity pack includes specifications for a minimum of 10 challenges. There is one main challenge (the Can-Do contest) that is used to teach the members of a team of four or five students the process of organizing, selecting their roles, building, programming, and testing their robot within the given time frame. Once they are familiar with the process, they can apply their knowledge to a number of other challenges described.

L909790—$30

For more information about ROBOLAB check our Web site at www.pitsco-legodacta.com

New

TEAM CHALLENGE INTRODUCTORY ACTIVITY PACK #900055



This 33-page activities pack is designed for teachers who want to use the *Team Challenge* as an introduction to ROBOLAB. *Introductory Activities* provides step-by-step instructions that pairs of students use to build, program, and test the *RCX* robotic brick; setting up the IR tower; and downloading the firmware to controlling outputs and various commands. It also describes the different programming levels of ROBOLAB from pilot to inventor and introduces modifiers, jumps, forks, and merges.

Teacher's notes and handouts are provided for a fast but thorough student introduction to robotics and programming. Includes instructions for building a model called the "Acrobot" that serves as the basis for testing construction and programming skills.

Get your Middle and High School students started in ROBOLAB activities with the *Team Challenge Introductory Activity Pack.*

L900055—$25

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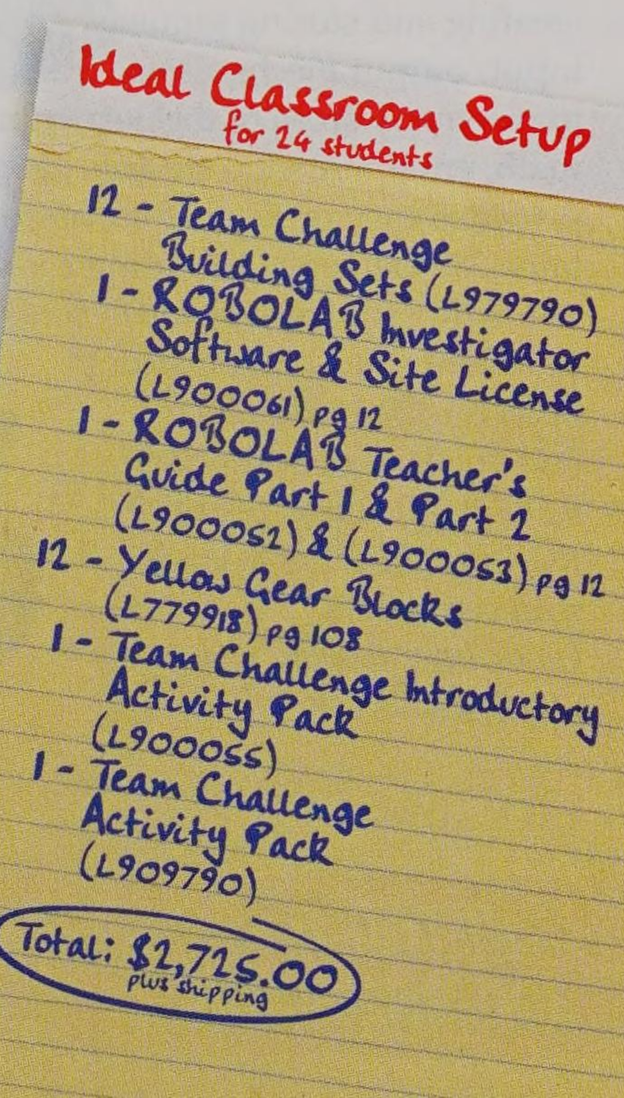
ROBOLAB Overview 2-3
ROBOLAB Starter System 4-5
• *Team Challenge*. 6-7
Cities & Transportation/ Amusement Park . . . 8-9
Intelligent House . 10-11
ROBOLAB Investigator 12-13
Red Rover, Red Rover 16-17
Control Lab. 18-19
Brutus 20-21

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html



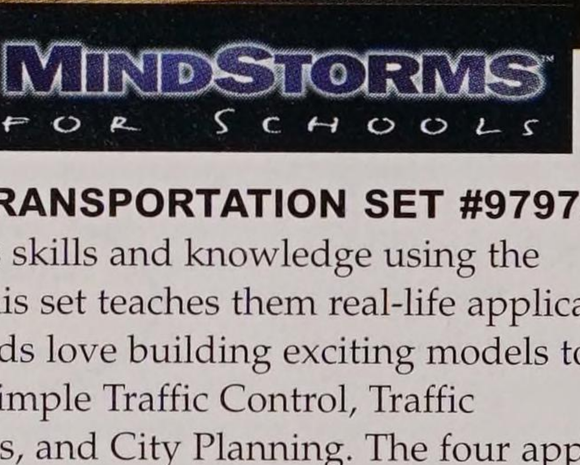
8 Cities & Transportation/ Amusement Park

LEGO MINDSTORMS FOR SCHOOLS

EXCLUSIVE

ROBOLAB CITIES AND TRANSPORTATION SET #979723

Expand students' robotics skills and knowledge using the *Cities and Transportation Set*. This set teaches them real-life applications of automated devices. Kids love building exciting models to explore four different topics: Simple Traffic Control, Traffic Monitoring, Intelligent Vehicles, and City Planning. The four applications cover, in a step-by-step manner, computer concepts such as creating and storing sequences of instructions and using input/output mechanisms. Teachers enjoy the way the set integrates many areas of the curriculum, including science, technology, math, environmental studies, geography, and social studies. Plus, it provides easy methods for classroom management. The set contains 389 elements, including a 9-volt motor with gear reduction, two light sensors, two touch sensors, four lamps, building instructions for the four models, and an element-sorting tray. ROBOLAB software and *RCX* programmable brick sold separately.

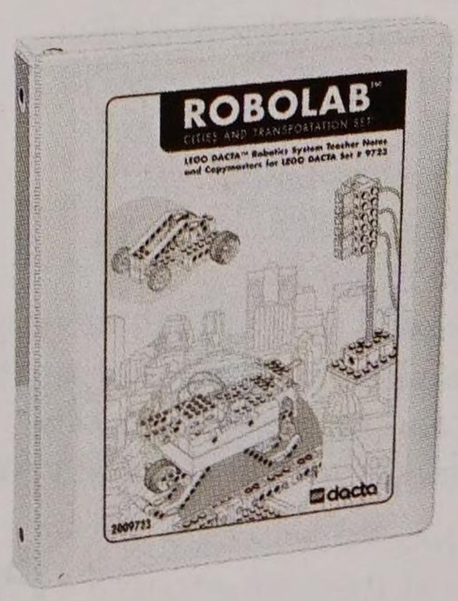


Level: Intermediate

L979723—$115

EXCLUSIVE

ACTIVITY PACK FOR CITIES AND TRANSPORTATION SET #909723



The activity pack, to be used with the ROBOLAB *Cities and Transportation Set*, contains worksheets that cover information required to carry out the activities including fundamentals of robots and robotics; the *RCX* brick; sensors; and the use of the computer to plan, build, download, and modify a program.

Level: Intermediate

L909723—$30

Call Toll Free!
800-362-4308

Cities & Transportation/ Amusement Park 9

Incorporate the ROBOLAB Amusement Park Set *in school projects for students age eight and above. The set consists of a series of models designed around an amusement park theme, supplementing the design, construction, and programming skills learned from the ROBOLAB* Starter Set.

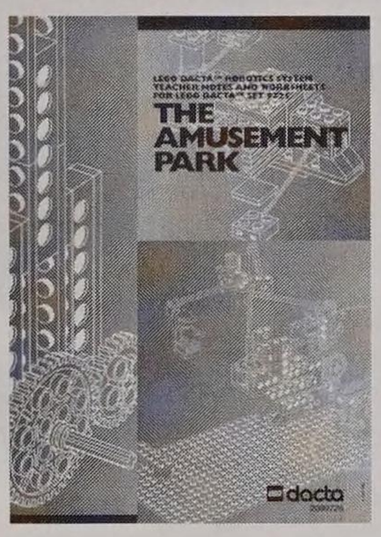
ROBOLAB Overview 2-3
ROBOLAB Starter System 4-5
Team Challenge. 6-7
• *Cities & Transportation/ Amusement Park . . . 8-9*
Intelligent House . 10-11
ROBOLAB Investigator 12-13
Red Rover, Red Rover. 16-17
Control Lab. 18-19
Brutus 20-21

LEGO DACTA AMUSEMENT PARK SET #979725

Fun set contains enough bricks, sensors, motors, and leads to build one of four models – a ghost train, a bumper car, a merry-go-round, or a tour bus – as part of a larger class project. One set contains pieces to build one model at a time. It is designed so that students can work at a range of ability levels, enabling them to progress as their skills develop.

Set contains 293 elements, including two 9-volt motors, one light sensor, two touch sensors (without wires), six wires, full-color building instructions for each of the four models, and a plastic case with trays. ROBOLAB software and *RCX* programmable brick sold separately.

L979725—$115



ACTIVITY PACK FOR AMUSEMENT PARK SET #999725

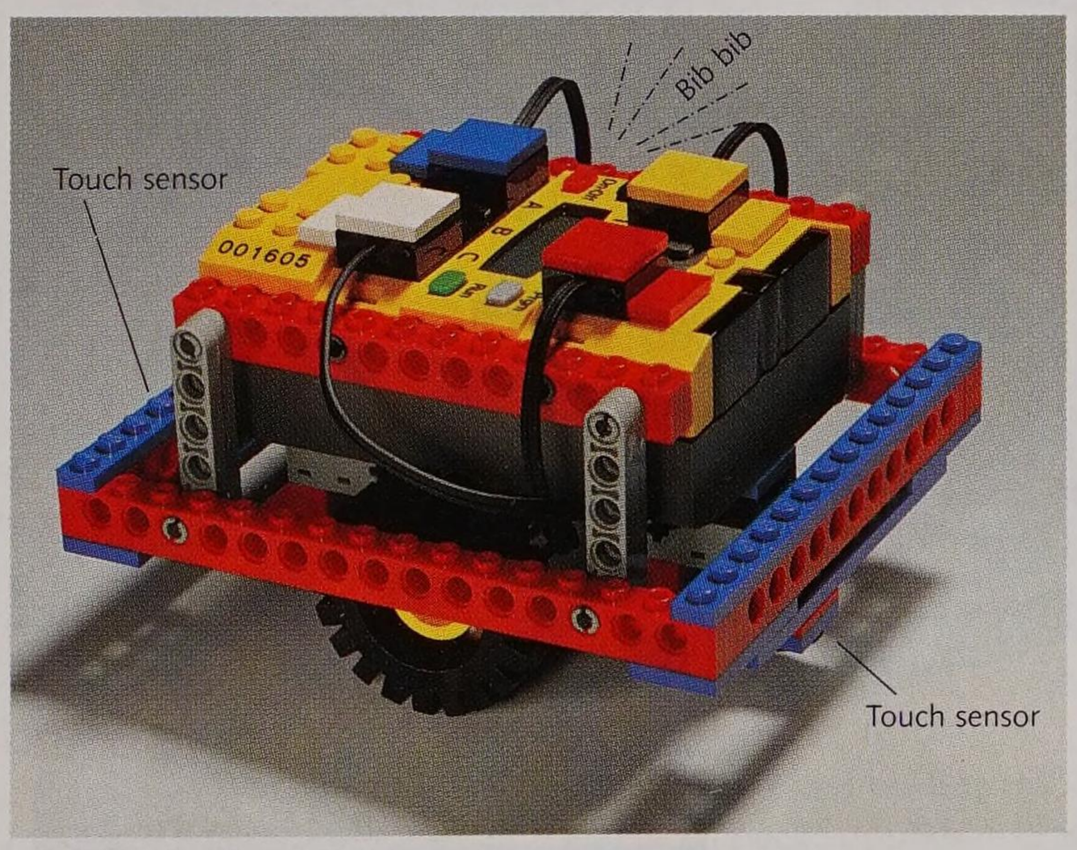
Thirty worksheets guide students step-by-step through a series of activities using the *Amusement Park Set*. Also includes instructions on how to use the worksheets, curriculum references, and theme ideas.

L999725—$30

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

New! Use LEGO Designer software to design and test your models before building them! See pages 34-35 for more details.



Bumper Car

Program the two motors to make it move forward, backward, and turn. Add the touch sensor to make it move when you press the sensor. Put the touch sensor and bumper together. Program the bumper car to move around and respond when it runs into something. Add beeps/sounds when the touch sensor is pressed.

The Amusement Park Set is an ideal complement to school projects, inviting pupils to recreate all the fun of a real-life fair.

Ideal Classroom Setup
for 24 students

For current ROBOLAB Starter System or Team Challenge users.
12 - Amusement Park Building Sets (L979725)
OR
12 - Cities and Transportation Building Sets (L979713)
1 - Amusement Park Activity Pack (L999725)
OR
1 - Cities and Transportation Activity Pack (L909713)

Total: $1,410 plus shipping

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

10 Intelligent House

Robotics

New

ROBOLAB INTELLIGENT HOUSE BUILDING SET #979795

Students ages 9-13 use computer-control concepts with *Intelligent House,* an engaging computer-interfacable LEGO building set that simulates the advanced security and comfort technology used in today's modern homes.

Students build the *Intelligent House* model from LEGO parts included in the *Intelligent House Building Set*. Then, using *ROBOLAB* software and the *Infrared Transmitter and Cable,* they program the *RCX* brick to control the model via sensors placed in and around the house. A myriad of household activities can be automated – lights, appliances, burglar and fire alarms, the garage door, ceiling fans, locks, and more.

Intelligent House Building Set uses sensors, computer-control concepts, and basic programming in an easily comprehensible way and is sure to hold the attention of students in your information technology, design technology, and science classes. Set contains:

- 154 LEGO elements including a micromotor, a lamp, a light sensor, and elements for building the house.
- 52-page, full-color instruction booklet.
- Transparent sorting tray.
- Full-color guide that identifies all included elements.
- Sturdy storage box with transparent lid.

Note: The *RCX Brick*, the *Infrared Transmitter and Cable*, and *ROBOLAB Software* are all sold separately.

L979795—$105

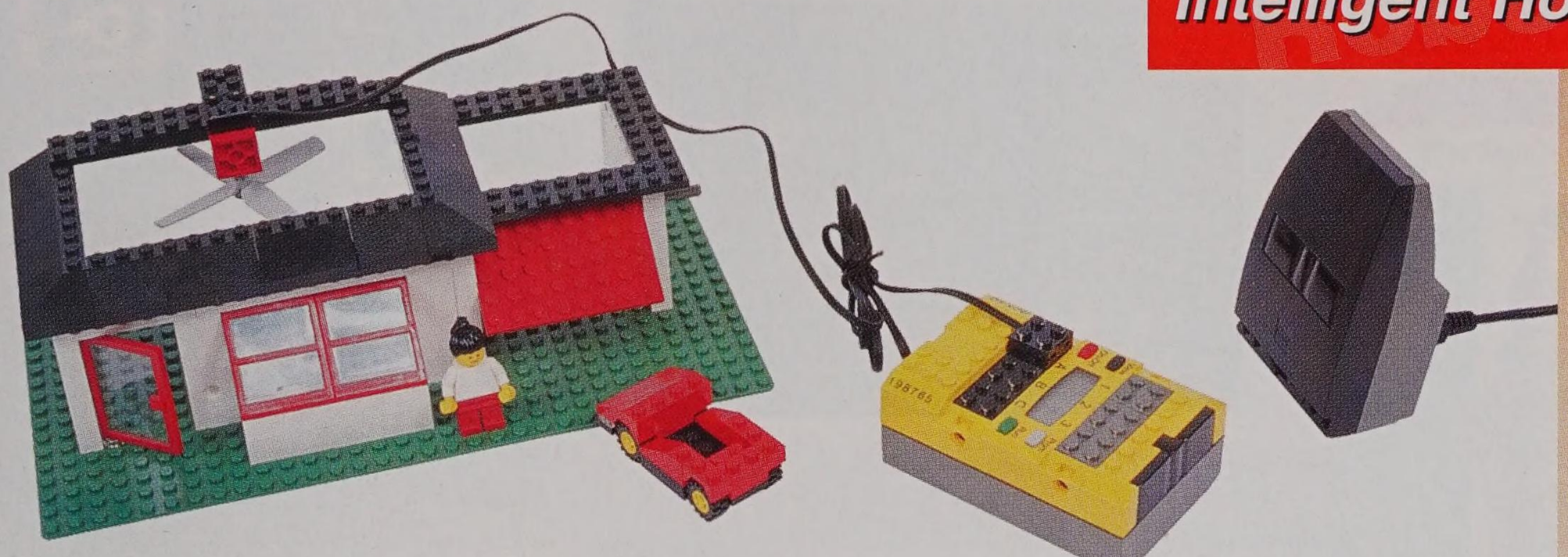
Available March 1, 2001

LEGO MINDSTORMS FOR SCHOOLS

For more information about ROBOLAB check our Web site at www.pitsco-legodacta.com

FreeFax™ Orders!
888-534-6784

Intelligent House 11



ROBOLAB
Overview 2-3
ROBOLAB
Starter System 4-5
Team Challenge. 6-7
Cities & Transportation/
Amusement Park . . . 8-9
• *Intelligent House* . 10-11
ROBOLAB
Investigator 12-13
Red Rover,
Red Rover. 16-17
Control Lab. 18-19
Brutus 20-21

New

ROBOLAB INTELLIGENT HOUSE ACTIVITY PACK #909795

Designed for use with *ROBOLAB Intelligent House Building Set*, this activity pack includes nine whole-class activities that cover:

- Home floor plan creation.
- Technology utilization to provide security, comfort, and entertainment in our homes.
- Introductory pilot level 1-4 programming examples.
- Intermediate and advanced programming examples for ROBOLAB *Programmer* and *Investigator* software.

Also included is a group project, "Home of the Future," and five additional activities involving use of angle, temperature, and touch sensors that may be purchased separately from the building set.

L909795—$25

Available March 1, 2001

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

New

ROBOLAB INTELLIGENT HOUSE CONVERSION PACK #990483

If you are a current *Intelligent House* user and wish to do *ROBOLAB Intelligent House* activities, this conversion pack supplies everything you need.

- #979709 *RCX Brick*
- #979713 Infrared Transmitter and Cable
- #900052 *ROBOLAB Getting Started Teacher's Guide*
- #900053 *ROBOLAB Getting Started 2 Teacher's Guide*
- #900051 *ROBOLAB* Investigator CD-ROM
- #909795 *ROBOLAB* Intelligent House Activity Pack

L990483—$279

Available March 1, 2001

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

Ideal Classroom Setup
for 24 students

For current ROBOLAB Starter System or Team Challenge users.

12 - ROBOLAB Intelligent House Sets (L979795)
1 - ROBOLAB Intelligent House Activity Pack (L909795)

Total: $1,285 plus shipping

12 ROBOLAB Investigator

Powered by National Instrument's LabVIEW

The curriculum support and software are developed in cooperation with TUFTS University, College of Engineering, Boston.

ATTENTION CURRENT ROBOLAB PROGRAMMER (ROBOLAB 1.5) SOFTWARE USERS!

You can purchase ROBOLAB *Investigator* as an add-on to your current software. This will enable you to utilize the data-logging features.

ROBOLAB PROGRAMMER ADD-ON
L990245—$25

LEGO MINDSTORMS FOR SCHOOLS

EXCLUSIVE

ROBOLAB INVESTIGATOR SOFTWARE FOR RCX

- Works on PCs and Macs
- Has same powerful software for many ages and levels of ability
- Constantly builds on previously learned concepts
- Is a quick and effective method to write, modify, and download a program, and to upload data
- Has many multitasking and high-level programming features including Internet control, while loops, sounds, feedback, help, and much more
- Contains data logging of sensors so users can graph data from the sensors (includes five levels of programming functionality ranging from beginner to university level)
- Has Internet control of *RCX* robots so users can "teleoperate" robots at other locations
- Utilizes direct control of the *RCX* so users can download commands to an *RCX* for immediate response
- Contains journal and presentation features so users can document their work and print the pages, create HTML pages, or presentation slides to show their work
- Enables students to invent their own projects; design how they will do them; run the activities; record their data; and present their results
- Bring real-life situations to data-logging activities for all levels of students
- Includes ROBOLAB *Programmer* software ("Pilot" and "Invent" Modes)

Online information, including a searchable Invent & Investigate database with activities that users (teachers and students) can download and Web site links of related topics, is included with the ROBOLAB *Investigator* software.

ROBOLAB INVESTIGATOR CD (ONLY)
L900051—$59
ROBOLAB INVESTIGATOR SOFTWARE & SITE LICENSE
L900061—$199

Your students are already proficient at constructing LEGO models. Now, give them an entirely new and refreshing adventure – data logging with ROBOLAB!

ROBOLAB software provides icon-oriented or object-oriented programming designed to maximize features of the RCX brick in an easy-to-use programming environment. Familiar drag-and-drop techniques highlight the software in two previous modes, "Pilot" and "Inventor," and now in the newest mode, "Investigator."

Students will learn to think logically and creatively as they program a series of commands (events) for the RCX. They also can explore the many possibilities of data logging.

EXCLUSIVE

ROBOLAB GETTING STARTED 2 TEACHER'S GUIDE #900053

This new teacher's guide is the second of two books on the ROBOLAB software. This book describes how to use the *Investigator* data-logging component of ROBOLAB *Investigator*, the newest version of the software.

L900053—$25

ROBOLAB GETTING STARTED TEACHER'S GUIDE #900052

L900052—$25

SPANISH VERSION

L200052—$25

ROBOLAB INVESTIGATOR SYSTEM REQUIREMENTS

* You have the option of loading just *Programmer* or *Programmer* and *Investigator*

PC
Windows 95 or better
32 MB RAM for *Investigator* installed on top of *Programmer*
16 MB RAM for *Programmer* only
1 serial communications port

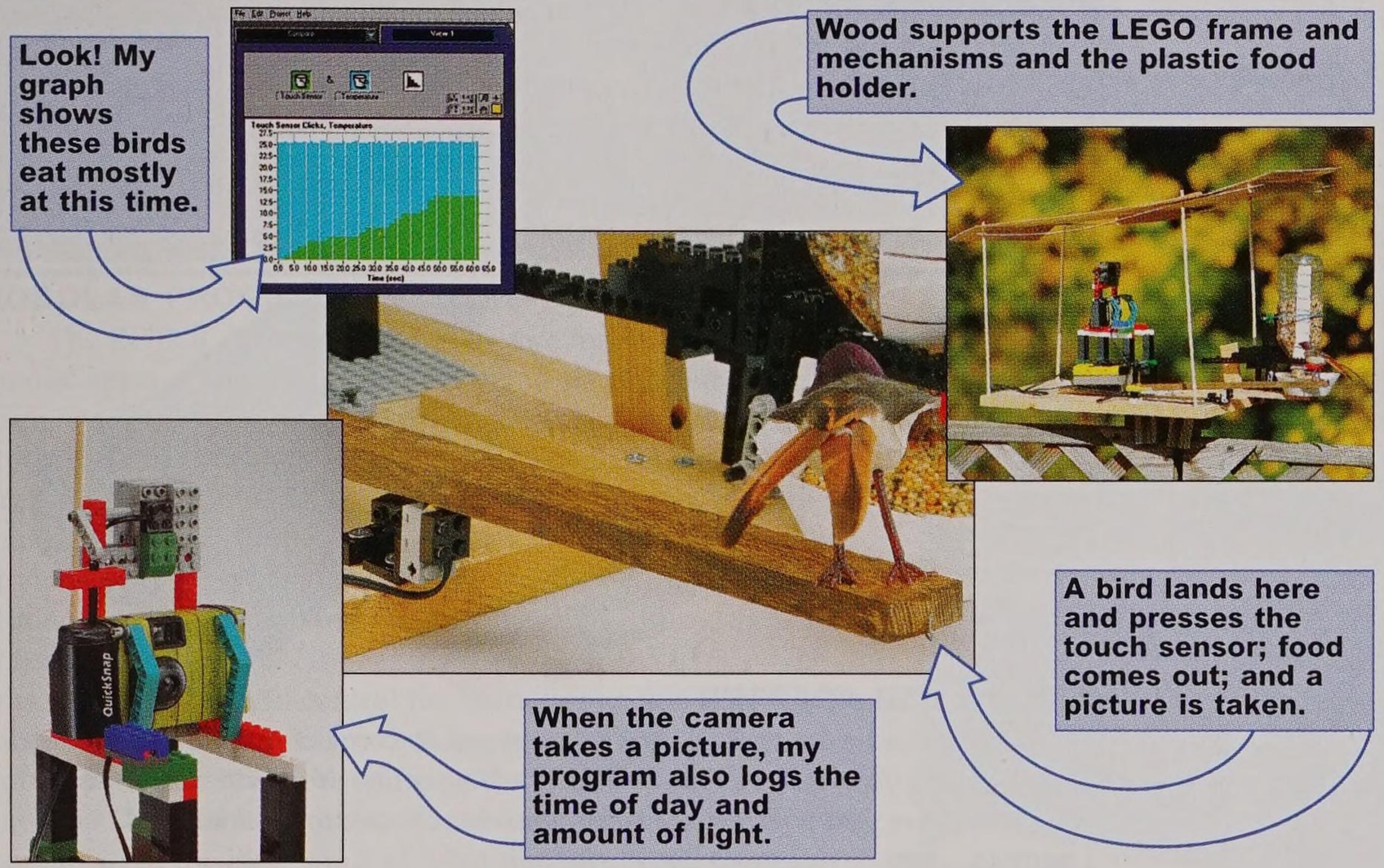
Macintosh
System 7.5 or better
32 MB RAM for *Investigator* installed on top of *Programmer*
16 MB RAM for *Programmer* only
1 serial communications port

Order Online!
www.pldstore.com

DATA LOGGING WITH *ROBOLAB INVESTIGATOR*

Students are naturally curious and ask many questions. They love science, technology, and other activities in which they create and explore. Using the power of the LEGO *RCX* programmable brick, the ROBOLAB software, and their own imaginations, students INVENT instruments so they can INVESTIGATE and find answers to their questions. They become scientists and engineers, using technology to learn in a powerful way.

What types of birds live in my backyard? How often do they eat? Do they eat the most in the morning? Which food do they like the best? Which type of bird eats the most?



ROBOLAB Overview 2-3
ROBOLAB Starter System 4-5
Team Challenge. 6-7
Cities & Transportation/ Amusement Park . . . 8-9
Intelligent House . 10-11
• *ROBOLAB Investigator 12-13*
Red Rover, Red Rover 16-17
Control Lab. 18-19
Brutus 20-21

STANDARDS

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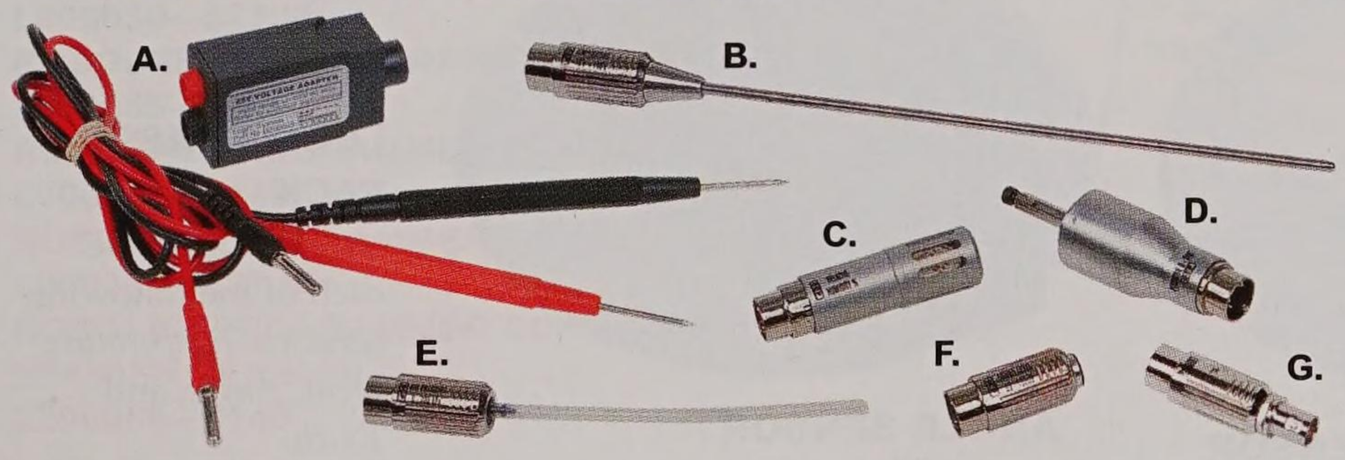
To download comprehensive data-logging activities and teacher notes, check www.lego.com/dacta/robolab

DCP SENSORS

DCP produces data-logging products that are used throughout the world.



A. VOLTAGE SENSOR

+/- 25 volts DC; resistance over probes: 410 ohms.

L990252—$55

B. PROTEMP SENSOR

-30°C to +130°C.

L990249—$55

C. HUMIDITY SENSOR

0-100% relative humidity over a temperature range of -20°C to +80°C.

L990250—$195

D. MOTION SENSOR

360° rotation, 340° measured.

L990248—$105

E. AIR PRESSURE SENSOR

0-200 kPa (approx. 0-30 psi).

L990253—$145

F. SOUND SENSOR

50 dBA to 100 dBA; frequency response is nominal A-weighted.

L990247—$80

G. PH SENSOR ADAPTER

To be used with pH electrodes with an output of 59.1 mV per unit of pH at 25°C. pH sensor not included.

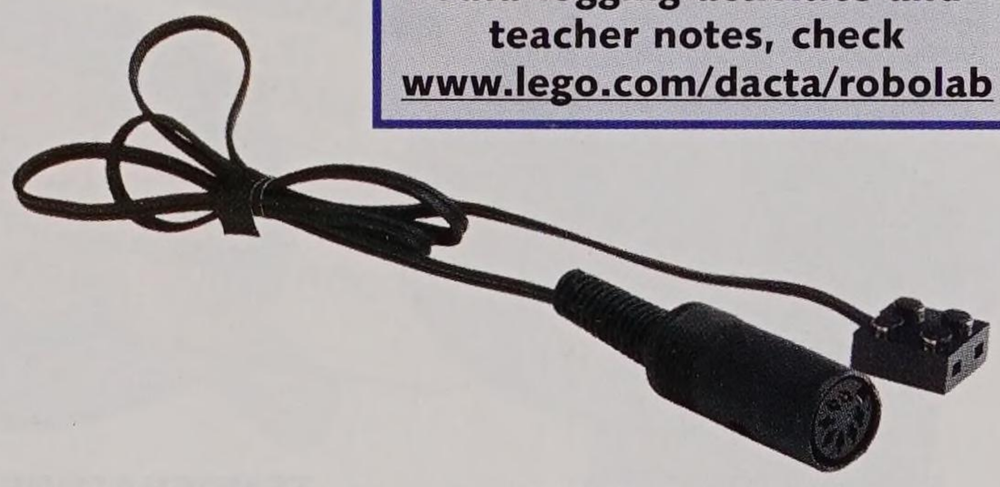
L990251—$80

DCP SENSOR PACK

All seven of the above sensors!

L990254—$675

NOTE: EACH DCP SENSOR LISTED ABOVE MUST USE A LEGO – DCP SENSOR ADAPTER (#779917) SHOWN AT RIGHT.



LEGO – DCP SENSOR ADAPTER #779917

This adapter allows you to connect DCP's range of sensors directly to the *RCX*. Using the ROBOLAB *Investigator* software, you can now include a broader range of sensors into your robotics and science activities. Remember, each *RCX* can only have three sensors connected at one time.

L779917—$55

ROBOLAB INVESTIGATOR CD, TEACHER'S GUIDE PART II, AND LEGO – DCP SENSOR ADAPTER #990246

This package includes everything required to begin data logging with the *RCX*. Just choose the sensors you need to conduct your science experiment.

L990246—$131

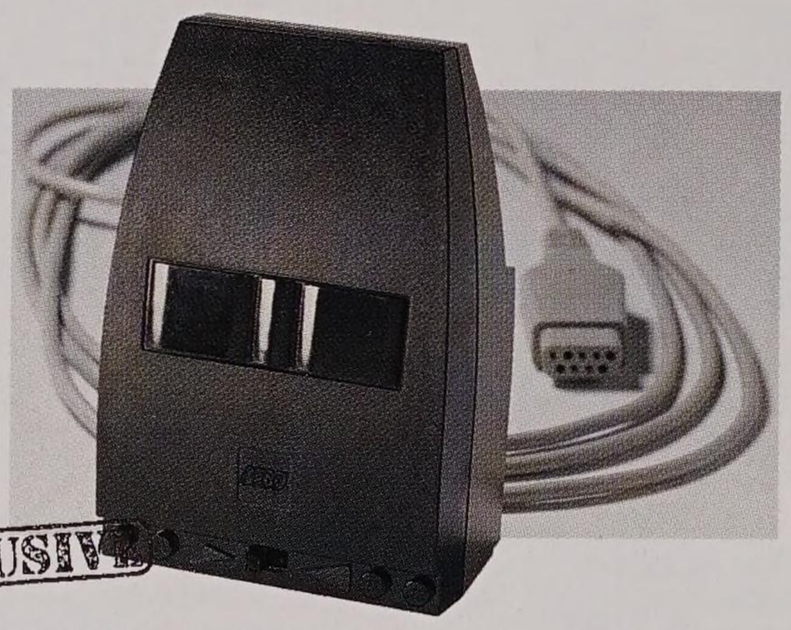
PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

14 Section Supplements

The *RCX* microcomputer is the heart of the ROBOLAB system. It receives programs from the ROBOLAB software (PC or Mac) via an infrared computer link and stores up to five programs at a time. The *RCX* then runs the programs when activated.

Up to three inputs can be used by the *RCX* to sense events in its environment, which in turn can determine what the three outputs will do to react to the sensing data.

The *RCX* is great for modeling and experimenting with robotics, machines, vehicles, manufacturing systems, . . . anything that can be controlled using inputs and outputs!



INFRARED TRANSMITTER AND CABLE PACK (PC AND MAC) #979713

Connects to a serial COM port on the computer. Allows the user to download programs from a computer into the *RCX*. We recommend purchasing one per computer.

L979713—$29

EXCLUSIVE

THE RCX PROGRAMMABLE BRICK #979709

A programmable LEGO computer. Comes with five built-in programs. Use the ROBOLAB software to create and download new programs into the *RCX* memory.

L979709—$119

EXCLUSIVE

AC ADAPTER #979833

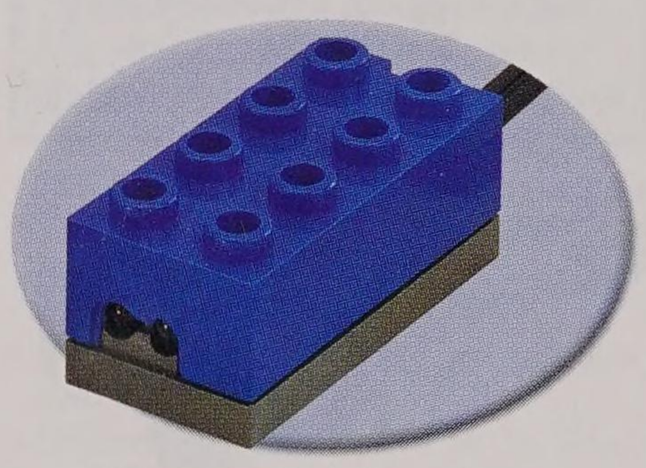
Allows the *RCX* to operate from a main power supply rather than from batteries. We recommend purchasing one per *RCX*.

L979833—$20

XIRCOM USB ADAPTER

The USB adapter from Xircom allows you to connect the *Infrared Transmitter* to your iMac or iBook (using a Mac cable). You will need one for each computer you will be using. Software for connection is included.

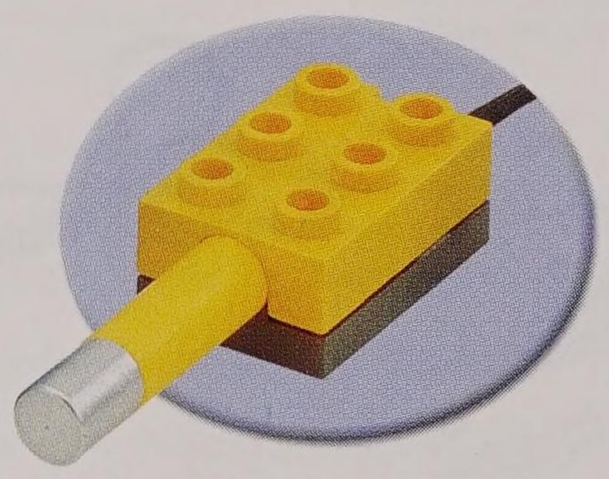
L990243—$59



LIGHT SENSOR

0.6 to 760 Lux.

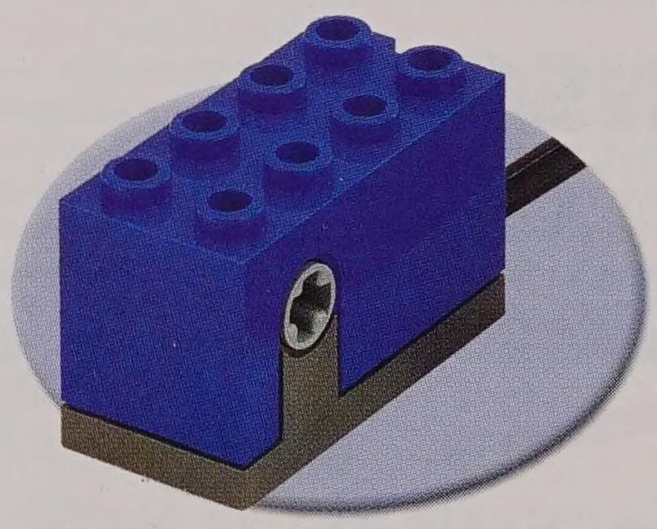
L779758—$22



TEMPERATURE SENSOR

-20°C to +50°C.

L979889—$27.50



ANGLE SENSOR

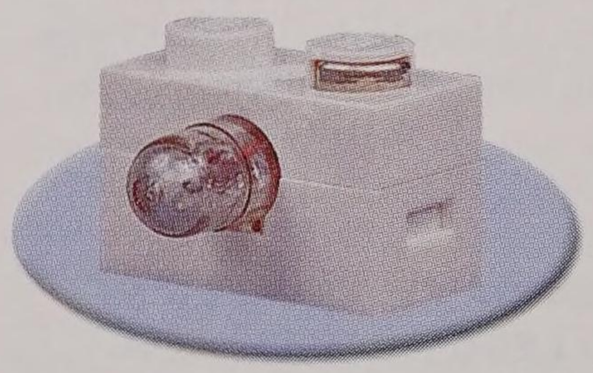
16 positions per rotation, maximum 500 rpm.

L979891—$16.50

LEGO SENSOR PACK

Includes one each of the following sensors: *Temperature*, *Light*, *Angle*, and *Touch*.

L900098—$70



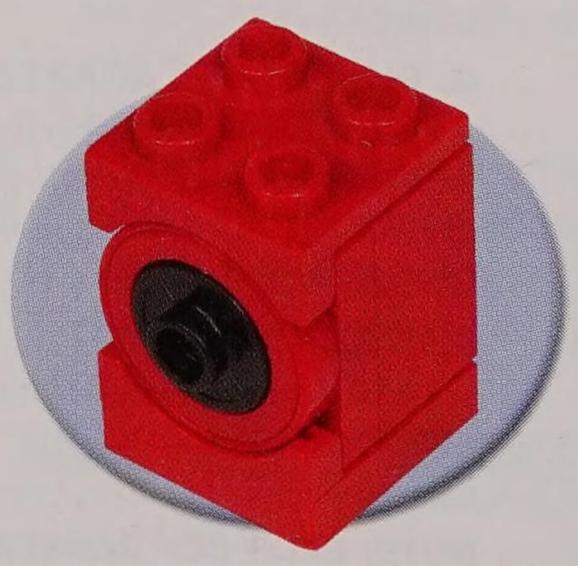
9V 1 X 2 LAMP BRICK

White, 2 pcs.

L970005—$10

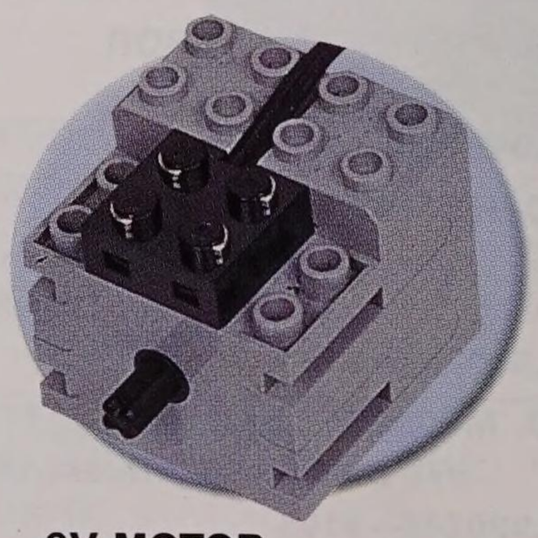
9V TOUCH SENSOR AND LEADS

L779911—$11



MICROMOTOR

L775119—$10.25



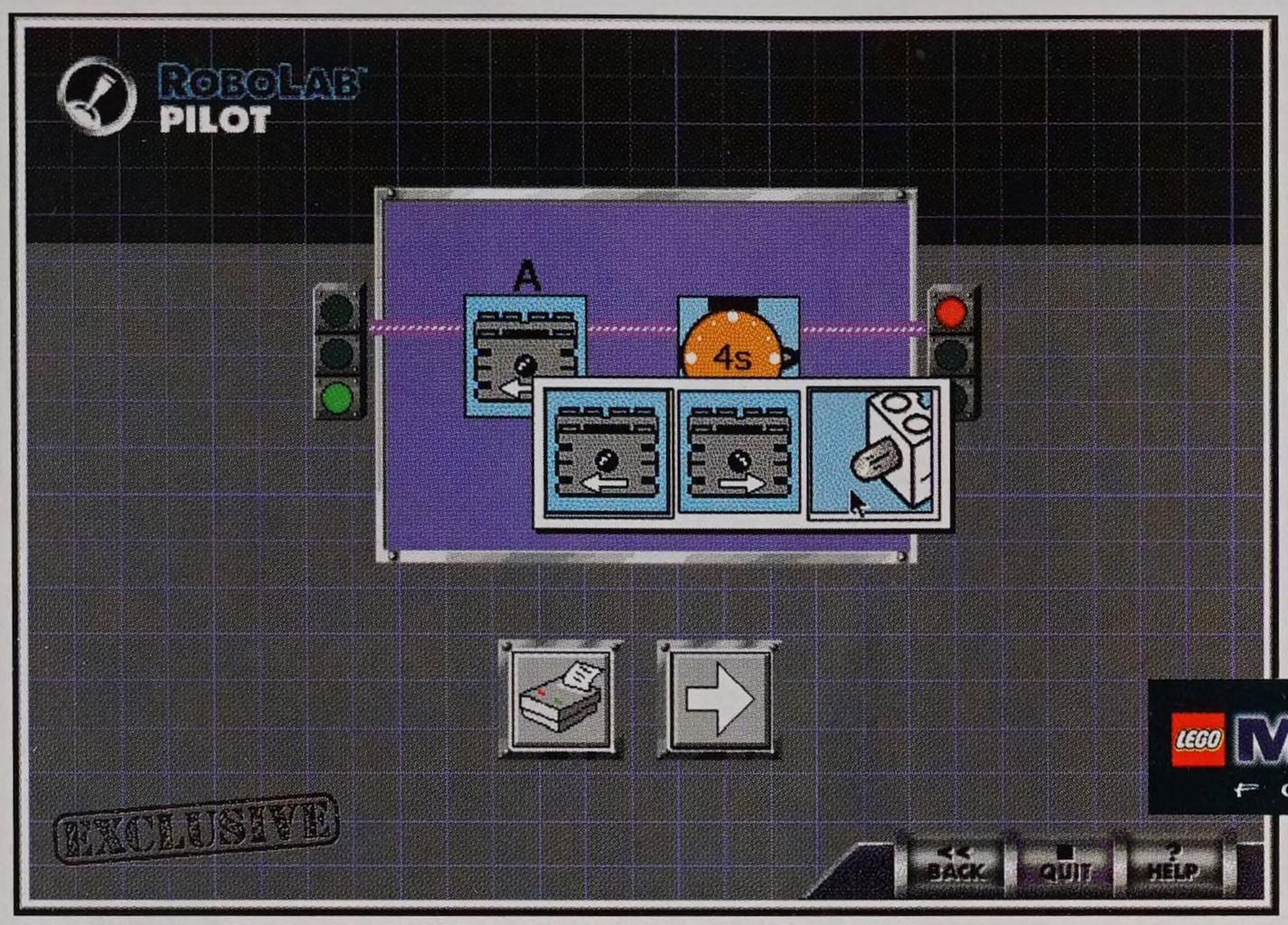
9V MOTOR

With gear reduction.

L775225—$16.25

Call Toll Free!
800-362-4308

Section Supplements 15



Powered by National Instrument's LabVIEW

The curriculum support and software are developed in cooperation with TUFTS University, College of Engineering, Boston.

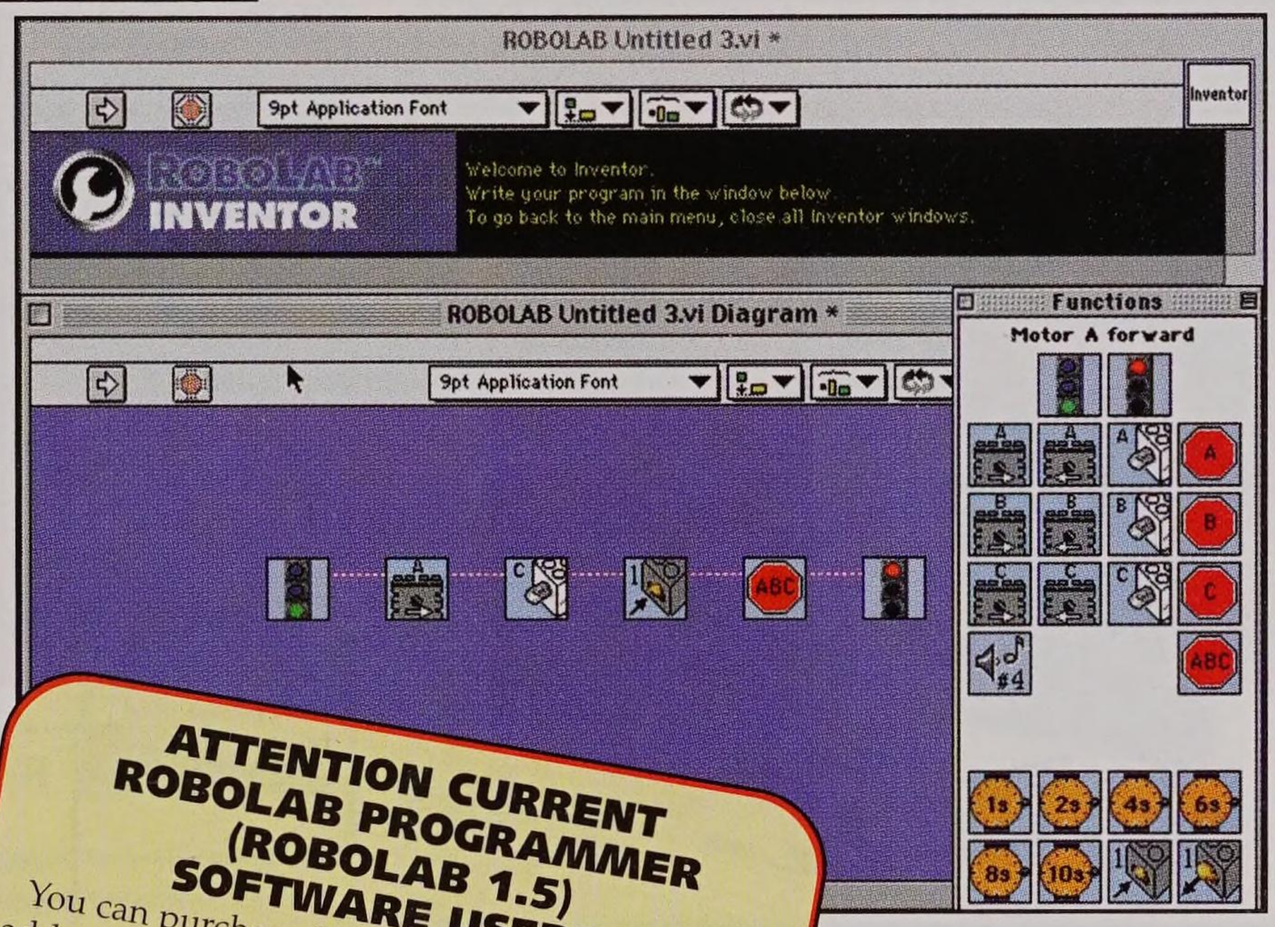
LEGO MINDSTORMS FOR SCHOOLS

ROBOLAB Overview 2-3
ROBOLAB Starter System 4-5
Team Challenge. 6-7
Cities & Transportation/ Amusement Park . . . 8-9
Intelligent House . 10-11
ROBOLAB Investigator 12-13
Red Rover, Red Rover 16-17
Control Lab. 18-19
Brutus 20-21

ROBOLAB PROGRAMMER SOFTWARE FOR RCX

The ROBOLAB *Programmer* software incorporates an incremental approach for students to learn about programming. Each level of "Pilot" and "Inventor" adds features that allow students to write increasingly more detailed and difficult programs. The flowchart-like programs are logical and easy to understand. The "Pilot" level gives students a more structured environment to begin to explore the concepts. "Inventor" gives students more freedom in how they build their programs. The software is based on National Instrument's LabVIEW, which was used by NASA to control the Mars Rover. It is also used by thousands of companies for data logging, control, and automation tasks. This makes the software the perfect link from school to work. Detailed help menus are always available on-screen to explain what the icons are and what they do. **Note: Does not include Robolab *Investigator* software (page 12). If in doubt, buy *Investigator*. It has it all!**

ROBOLAB PROGRAMMER CD (ONLY)
L900050—$37.50
ROBOLAB PROGRAMMER CD & USER'S GUIDE
L990085—$60
ROBOLAB PROGRAMMER SOFTWARE & SITE LICENSE
L900060—$149
ROBOLAB PROGRAMMER CD (only), SPANISH VERSION
L200050—$37.50
ROBOLAB PROGRAMMER SOFTWARE & SITE LICENSE, SPANISH VERSION
L200060—$149



ATTENTION CURRENT ROBOLAB PROGRAMMER (ROBOLAB 1.5) SOFTWARE USERS!

You can purchase ROBOLAB *Investigator* as an add-on to your current software. This will enable you to utilize the data-logging features.

ROBOLAB PROGRAMMER ADD-ON
L990245—$25

LEGO MINDSTORMS REMOTE CONTROL #779738

The LEGO *Mindstorms Remote Control* enables remote control of robots or models by activating the *RCX* at a distance of up to twenty feet or seven meters. When aimed directly at the brick, the remote control activates the brick by using infrared light and operates the same way as a television remote control. It enables the operator to control one, two, or all three motor/output ports directly or to run any of the five *RCX* programs at a distance. It also has a beeper button, which indicates whether the *RCX* brick is within range of the remote control, and a stop button. The remote control operates on two 1.5-volt AA batteries.

L779738—$21

Professional staff development available in most states. Call for details. 1-800-362-4308

EXCLUSIVE

ROBOLAB GETTING STARTED TEACHER'S GUIDE #900052

Introductory-level manual with hardware and software support. Enables quick starts with ROBOLAB.

L900052—$25
SPANISH VERSION
L200052—$25

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

16 Red Rover, Red Rover

1. Connection Status
2. Communication Center
3. General Controls
4. Sensors
5. Program Controls
6. Navigation
7. Image Control
8. Image Display

RED ROVER, RED ROVER II: MARS SITE PACKAGE

In the future much of space will be explored by robots. In 2001, NASA will make another trip to Mars with a vehicle similar to the rover that originally landed there in 1998. Assist your students in simulating this experience in a hands-on way.

The *Mars Site Package* includes:

- *Red Rover, Red Rover* software Version 4.0
- All necessary cables and connections
- 4 LEGO Dacta tires
- *Guide to Exploring Mars* book
- Teacher's Suggestion and Activity Guide
- Software User's Guide
- One-year membership to Red Rover, Red Rover Team (includes one-year membership to The Planetary Society)
- Technical support provided by Pitsco LEGO Dacta

You'll also need:

- LEGO DACTA *Team Challenge Building Set* (#979790, page 7)
- PC Computer (Pentium, 90 MHz) with Windows 95 or 98
- Internet access (needed to explore other Mars sites)
- *LEGO Studios Camera* and Software (#979647, page 35)

L990205 Mars Site Package (PC only)—$195

L979790 Team Challenge Building Set—$199

FreeFax™ Orders!
888-534-6784

Reach beyond your classroom . . .

This exciting product, in the spirit of the NASA Mars mission, gives students the opportunity to discover robotics and engineering as they design and build their LEGO rovers. They learn about planetary exploration by building their own Mars terrains in their classrooms. They explore their world from the vantage point of a remote camera – just like the NASA scientists! They reach beyond their own classrooms, via Internet, and drive rovers built in New York, Los Angeles, Toronto, Sydney, and any of the new sites appearing around the world!

As an option, your site can be explored by other students from around the world as well!

Your students will work like NASA scientists and engineers as they:

- Design and build a roving robot from LEGO DACTA *Team Challenge Set* building elements.
- Remotely control their rover with the computer as it roams a student-built Martian terrain. A miniature black-and-white camera provides a view of the alien world.
- Control other rovers at other sites around the world via Internet connection.

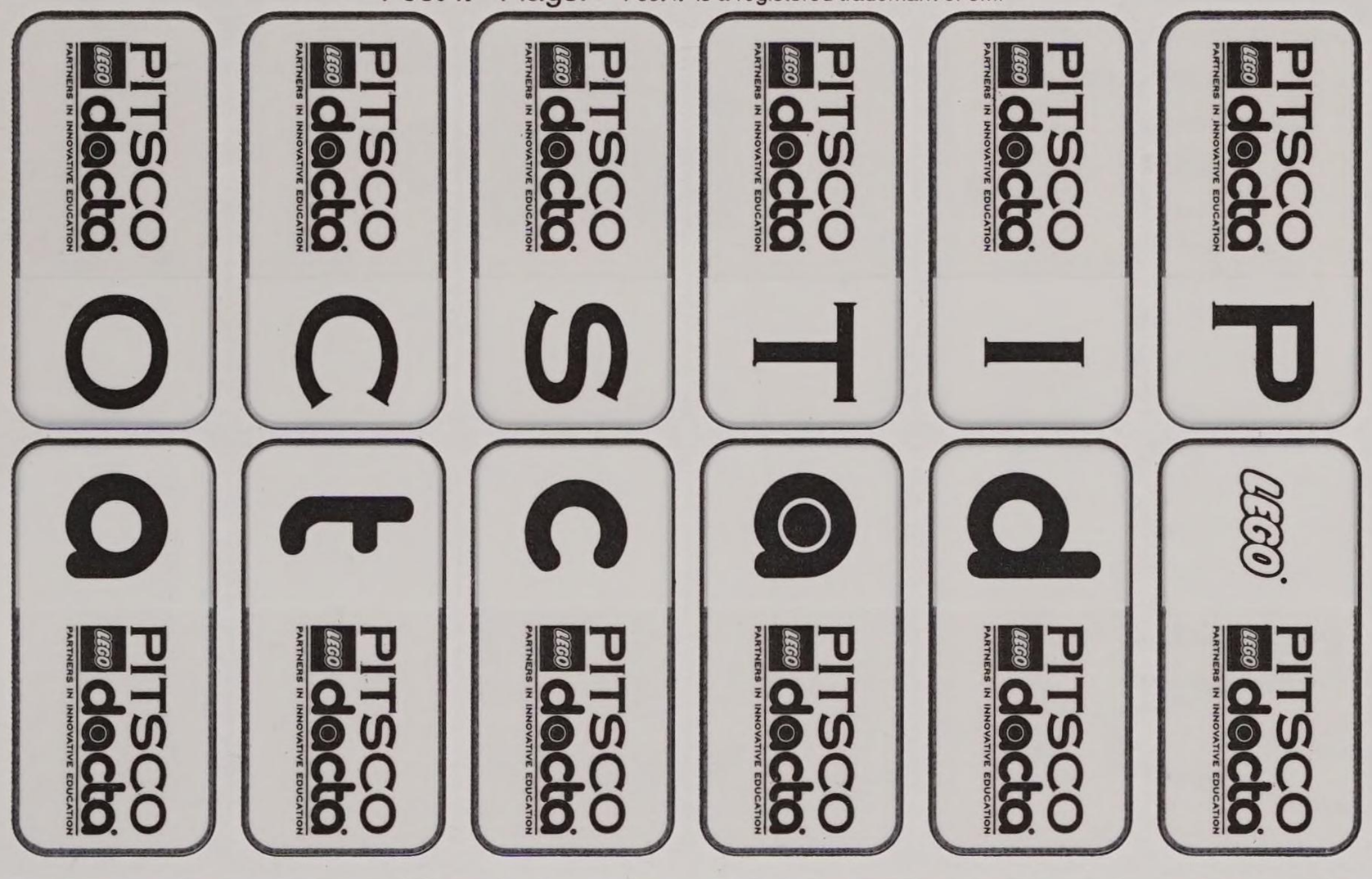
The Red Rover, Red Rover Project was developed by The Planetary Society in cooperation with Visionary Products, Inc. and the Center for Intelligent Systems at Utah State University. Red Rover, Red Rover is a trademark of The Planetary Society.

Developed by The Planetary Society!

The *Red Rover Mars Site Package* works in conjunction with the *LEGO DACTA Team Challenge Set* (#979790), which is sold separately. See page 6 or 17 for more information on the *Team Challenge Set*.

USE THESE Post-it® Flags TO MARK THE PAGE OF THE ITEMS YOU LIKE!

Post-it® Flags. • "Post-it" is a registered trademark of 3M.



Visit us online!

www.pitsco-legodacta.com

Check out the Pitsco LEGO Dacta Web site! You'll find some great resources—ideas for great LEGO Dacta activities in the classroom, product information, grant proposal tips, sales contact information, and locations of educational conferences in your area. You can even share experiences with other educators who are using Pitsco LEGO Dacta products. Just point your browser to **www.pitsco-legodacta.com**, and let the adventure begin!

or call us toll free at 1-800-362-4308

PITSCO LEGO dacta®

PARTNERS IN INNOVATIVE EDUCATION

Red Rover, Red Rover

TEAM CHALLENGE BUILDING SET #979790

Ideal for building Mars Rovers! The *Team Challenge Building Set* enables groups of four or five students to simulate real-life robotics and robotic systems. Each member of the group assumes a role and works with the others to solve the set assignments. Time and material constraints add to the challenge. The set contains 715 elements including one *RCX*, one *Infrared Transmitter* with cable for PC or Mac, two gear motors, one light sensor, two touch sensors, wires, full-color building instructions, a sorting tray, and an element survey.

L979790—$199

EXISTING CONTROL LAB USERS

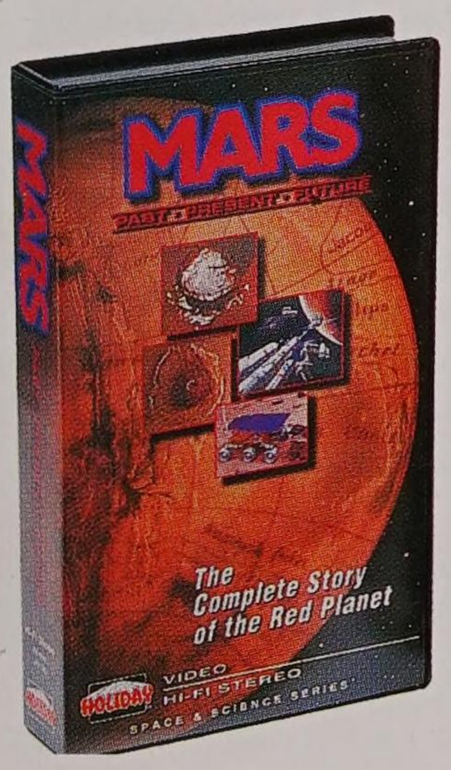
Red Rover, Red Rover II: Mars Site Package can also be used in conjunction with the LEGO DACTA *Control Lab Starter Pack* (#970943). See page 18.

MARS: PAST, PRESENT, FUTURE CD-ROM

Students can use this CD-ROM as a 50-minute continuous-play program, or alternatively, they can explore Mars at their own pace, using the interactive menus to travel through six segments dealing with Martian history, exploration, and future plans, including colonization and resource utilization. Stunning graphics and clear narrative make this an excellent supplement for a science, space, or technology curriculum.

Level: Intermediate-Adult

L990216 Mac/Win CD-ROM—$24.95



MARS: PAST, PRESENT, FUTURE VIDEO

This video, subtitled *The Complete Story of the Red Planet*, describes what we currently know about Mars based on the Mars *Pathfinder* and Mars *Global Surveyor* missions. It also speculates on future missions and what questions they will answer. Actual photographs of the Martian surface are interspersed with computer simulations and explanations from Martian experts. Time: 46 minutes.

Level: Intermediate-Adult

L990215—$24.95

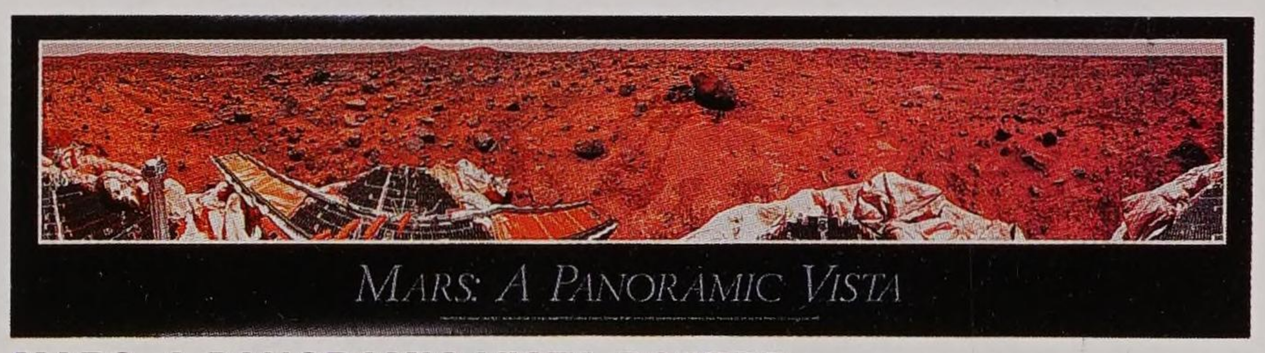
INTERACTIONS: BUILDING A ROVER VIDEO

What kind of vehicle can traverse the surface of the Moon or Mars? It must be one part robot, one part all-terrain vehicle, and one part remote-controlled car. It must be able to think for itself, even repair itself! At NASA's testing ground, a team of scientists demonstrate their vehicle, *Rocky 2*. Building a rover will spark your students' ingenuity while demonstrating the importance of mathematical concepts like geometry and patterns. Includes a teacher's tip sheet with suggested vocabulary and activities.

Time: 15 minutes.

Level: Middle School-High School

L754461—$49.95



MARS: A PANORAMIC VISTA POSTER

Size: 10" x 39".

L756064—$7

ROBOLAB
Overview 2-3
ROBOLAB
Starter System 4-5
Team Challenge. 6-7
Cities & Transportation/
Amusement Park . . . 8-9
Intelligent House . 10-11
ROBOLAB
Investigator 12-13
• *Red Rover,*
Red Rover 16-17
Control Lab. 18-19
Brutus 20-21

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

Ideal Classroom Setup
for 24 students

1 - Red Rover Mars Site Package (L990205)
8 - ROBOLAB Team Challenge Sets (L979790)
1 - Interactions: Building A Rover Video (L754461)
1 - Mars: Panoramic Vista Poster (L756064)
1 - Mars: Past, Present, Future Video (L990215)
1 - LEGO Studios Camera and Software (L979647) pg 35

Total: $1,997.90 plus shipping

PITSCO LEGO dacta
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18 Control Lab

CONTROL LAB STARTER PACK

The LEGO DACTA *Control Lab* is available in a *Starter Pack* that provides everything you need for one computer station. It includes:

- LEGO DACTA *Control Lab Building Set* (#979701) with 527 pieces containing motors, lamps, sensors, snap-lid case, and building instructions for seven models
- *Serial Interface and Adapter* (#979751), which enables the computer to control the models through this interface
- LEGO DACTA *Control Lab Software* (#979704/#979705)
- Serial Cable (#979768/#979769)
- *Control Lab Curriculum Pack* (#970998) that includes *Setup Guide and Introductory Explorations*, *Quick Start Guide*, *Technology Investigations and Inventions*, and the *Reference Guide*

L970942 Control Lab Starter Pack (Macintosh)—$699

L970943 Control Lab Starter Pack (MS-DOS/Win 95)—$699

Order Online!
www.pldstore.com

LEGO DACTA CONTROL LAB

With the LEGO DACTA *Control Lab*, students build models and control them using a computer. The emphasis of this kit is placed on technology and robotics. By engaging in challenging, open-ended design activities, students discover important technology concepts. Step-by-step building cards can be followed, or students can be challenged to design their own models.

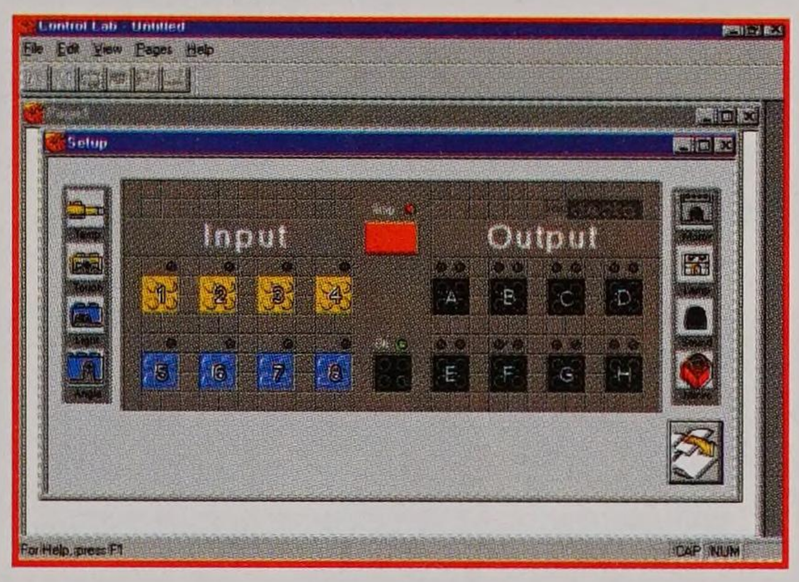
LEGO DACTA *Control Lab* activities include:

- Robotic Arm – Students solve problems as they learn about manufacturing and the systems approach.
- Greenhouse – Students experience biotechnology as they design and build the greenhouse system.
- Other models include an industrial robotic arm, dynamometer, joystick-operated wheelchair, vending machine, scanner, and conveyor.

CONTROL LAB SITE LICENSE #901305

A site license allows you to use the software on a network or any number of stand-alone computers in your building.

L901305—$138



Components are also available individually for setting up additional computer stations:

L979701 Control Lab Building Set—$267

L979705 Control Lab Software (MS-DOS/Win 95)—$95.25

(If you already have Control Lab MS-DOS, you can upgrade to Win 95. Call 1-800-362-4308 for details.)

L979704 Control Lab Software (Mac)—$95.25

L970998 Control Lab Curriculum Pack—$87

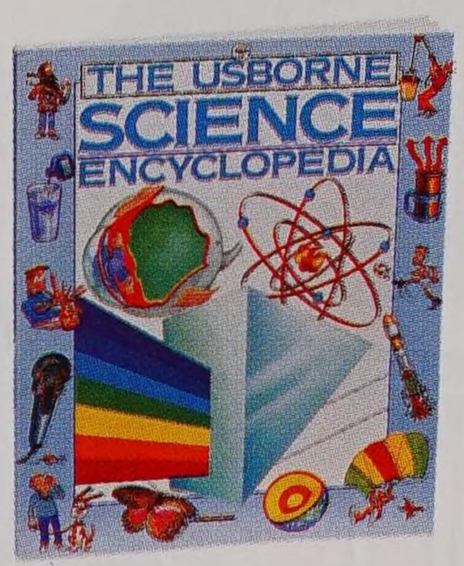
L979751 Serial Interface and Adapter—$265

L979769 Serial cable for Mac—$30

L979768 Serial cable for PC—$30

L979891 Angle Sensor—$16.50

L779758 Light Sensor—$22



THE USBORNE SCIENCE ENCYCLOPEDIA

Eight color-coded sections on topics such as "Counting and Measuring," "Heat and Energy," and "Electricity and Technology" introduce students to the physical sciences. Entertaining cartoon-like drawings in full color, plus many examples and demonstrations, bring scientific principles to life. An excellent resource for the classroom or an individual child. Paperback, 128 pages.

Level: Intermediate

L990214—$14.95

ROBOLAB Overview 2-3
ROBOLAB Starter System 4-5
Team Challenge. 6-7
Cities & Transportation/ Amusement Park . . . 8-9
Intelligent House . 10-11
ROBOLAB Investigator 12-13
Red Rover, Red Rover 16-17
•Control Lab. 18-19
Brutus 20-21

STANDARDS

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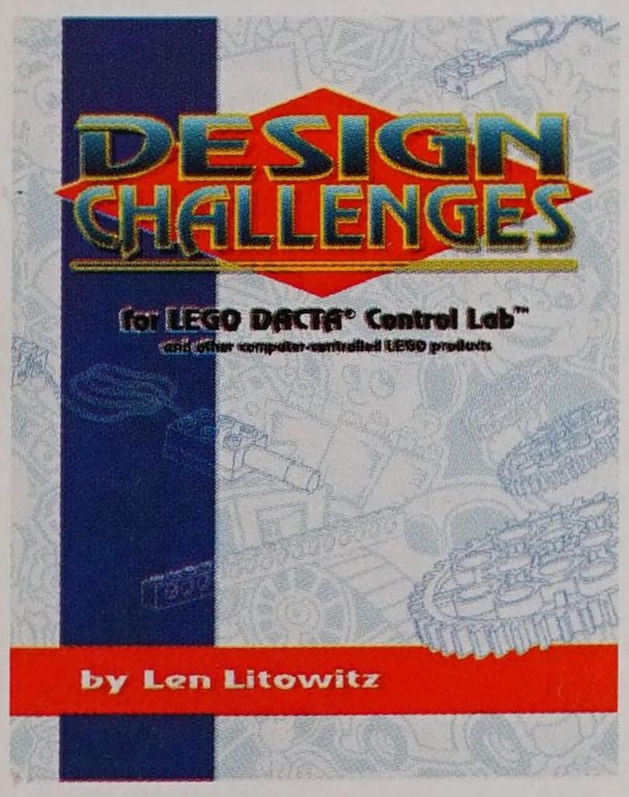
EXCLUSIVE



PITSCO DESIGN CHALLENGES FOR LEGO DACTA CONTROL LAB

So your students have had a great hands-on learning experience with LEGO DACTA *Control Lab* activities. Great! But don't stop there!

This book contains a series of copy master design briefs written specifically for use with the LEGO DACTA *Control Lab Set*. Design challenges are open-ended, with problem, background information, and design criteria. Each design brief has hundreds of potential solutions, so students' creativity will be challenged. Also includes evaluation tips and helpful suggestions for your own problem-solving activities. Requires previous experience with LOGO programming. Paperback, 22 pages.

Teacher Resource and Activity Book

L990023—$9.95

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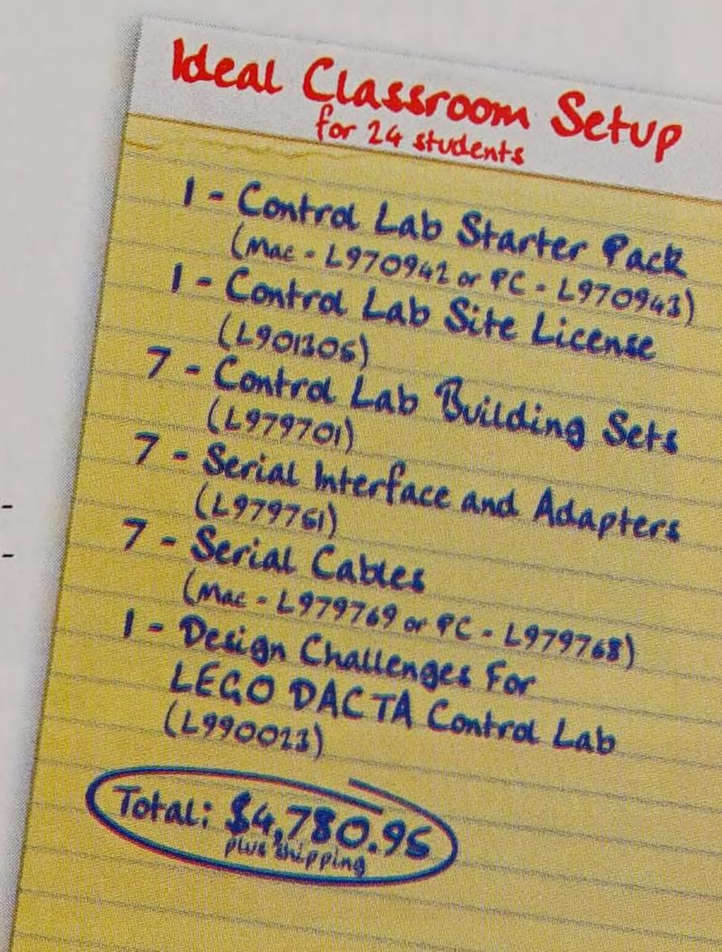


20 Brutus

BRUTUS SPECS
Axes: 6
Base: 6" height x 12" diameter
Base rotation: 60°
Maximum horizontal reach: 25"
Maximum vertical reach: 35"
Maximum gripper width: 3"
Weight: 25 lbs

HEAVY-DUTY METAL GEARBOXES
deliver impressive torque with outstanding durability.

"EVEN-GRIP" PINCHERS
firmly grasp objects without pushing them away.

WEIGHTED 12" DIAMETER BASE
provides solid footing for object manipulation.

STRONGER-THAN-NEEDED CONSTRUCTION
will provide years of trouble-free classroom use. Rugged aluminum and 1/4" thick ABS material comprise this "Brute."

Brutus control screen

PITSCO BRUTUS ROBOTIC ARM

Here's an industrial-strength robotic arm that executes commands with delicate precision, yet is rugged enough to withstand years of student use. Using *Brutus* in conjunction with a PC, students can explore robotics by creating programs to manipulate objects and perform repetitive tasks.

THE SOFTWARE

Students program *Brutus* using the included Windows-based software. The software features a user-friendly graphical interface and requires no prior programming knowledge. Using the teach pendant method, the software stores position data and will repeat entire sequences on command. Programs can be run in loop mode, and an easy-to-use editor allows quick correction of programming errors.

THE HARDWARE

Brutus' unique "even-grip" pinchers grasp objects up to three inches wide without pushing them away. Powerful electric motors and rugged, heavy-gauge materials make up the base and arm components. You'll find no easily stripped plastic gears on this brute!

Brutus is shipped completely assembled with computer interface hardware, connector cables, Windows-based software (DOS version is also included), and a robotics activity pack. Software is compatable with Windows 95, 98, and NT.

L754533—$2,750

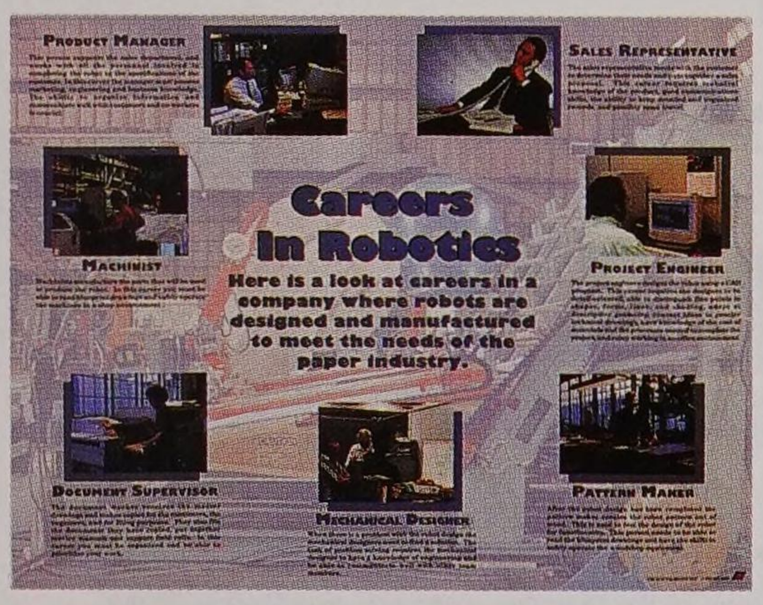
Call Toll Free!
800-362-4308

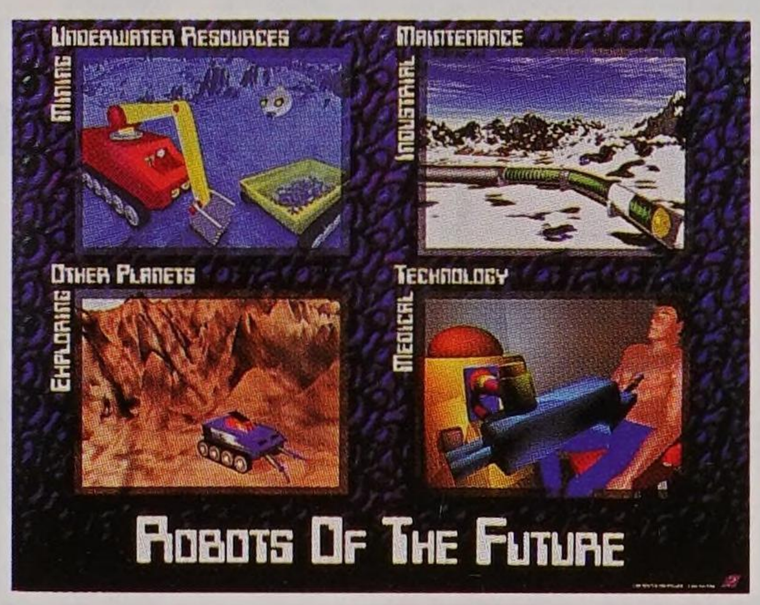
ROBOLAB
Overview 2-3
ROBOLAB
Starter System 4-5
Team Challenge. 6-7
Cities & Transportation/
Amusement Park . . . 8-9
Intelligent House . 10-11
ROBOLAB
Investigator 12-13
Red Rover,
Red Rover. 16-17
Control Lab. 18-19
• Brutus 20-21

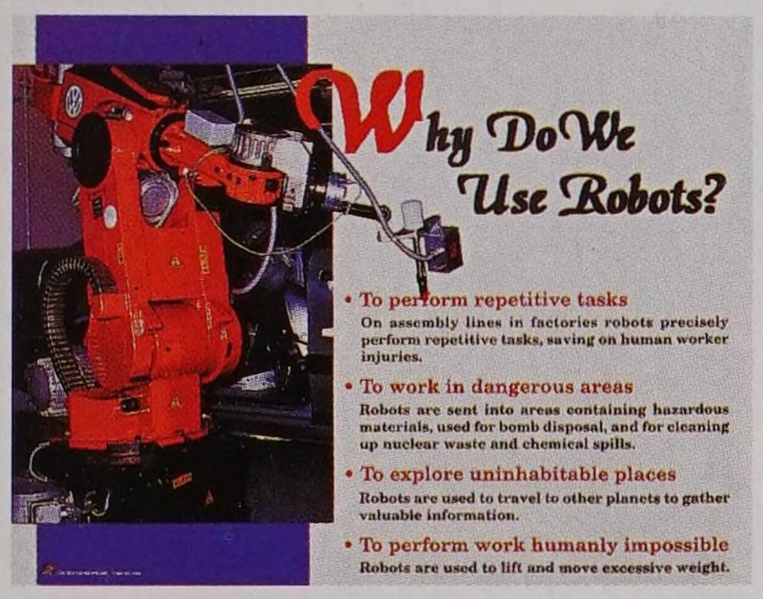
MOVIT CYCLONE ROBOT

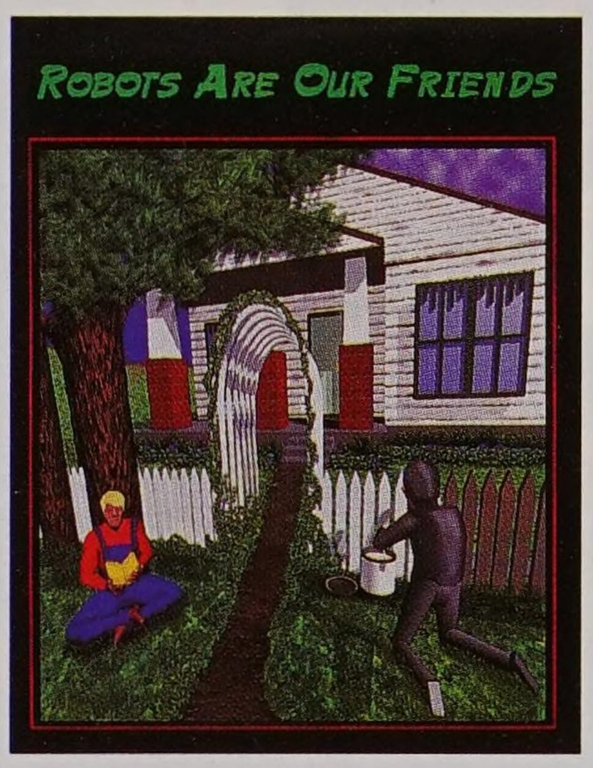
Learn basic electronics with this presoldered build-it-yourself *CYCLONE* robot! Controlled by a wireless remote radio controller, *CYCLONE* responds instantly to six commands: spin, swivel, forward, backward, left, and right. Control sticks give the user complete control of the robot's movements within a range of five meters. Included booklet contains complete assembly instructions with diagrams and technical data that includes a circuit diagram. Assembly requires intermediate experience; recommended for ages 10 and up.

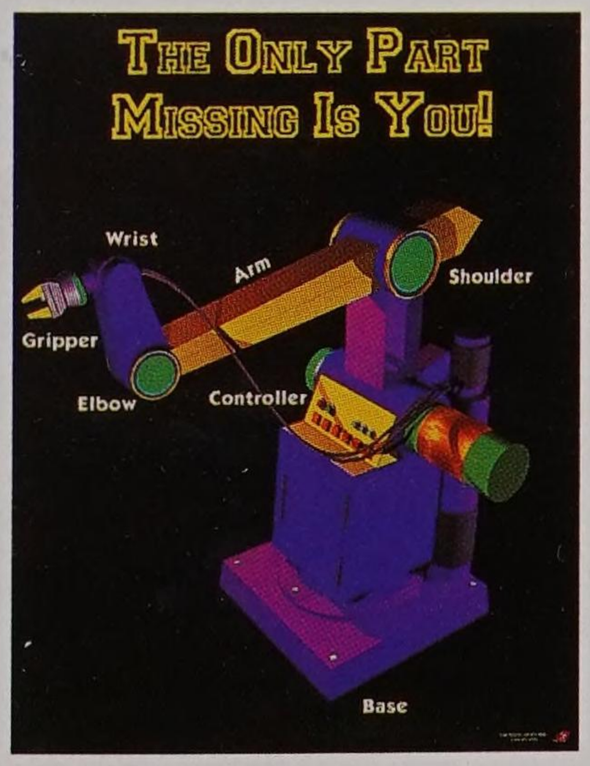
L756949—$82











ROBOTICS POSTERS

Five posters about robot parts, future performance, friendship, use, and careers will keep your students excited about the next robotics information you put on the wall. Size: 17" x 22" or 22" x 17".

L756186—$24.95 Set of 5

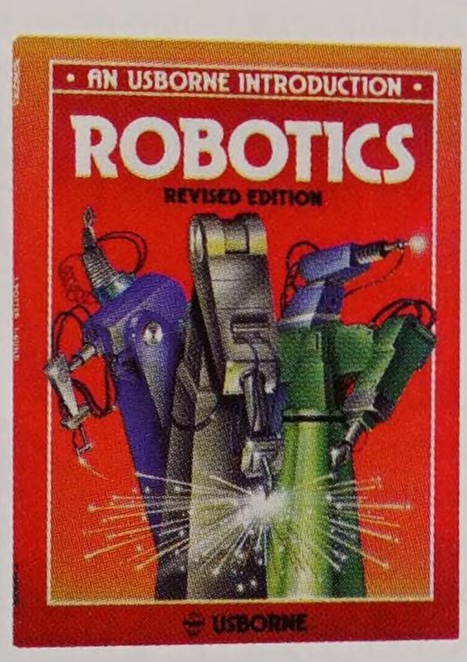
L756109 The Only Part Missing Is You!—$5.95

L756108 Careers In Robotics—$5.95

L756106 Why Do We Use Robots?—$5.95

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html



USBORNE: ROBOTICS

This book is chock-full of fascinating information about robots and robotics. It's fun and interesting to read with dozens of full-color illustrations and concise text. Covers real-world applications for robots, terminology, how they work, how they are controlled in space, robots underwater, and much more. Paperback, 48 pages.
Level: Intermediate-High School

L750953—$7.95

10 for $71.60

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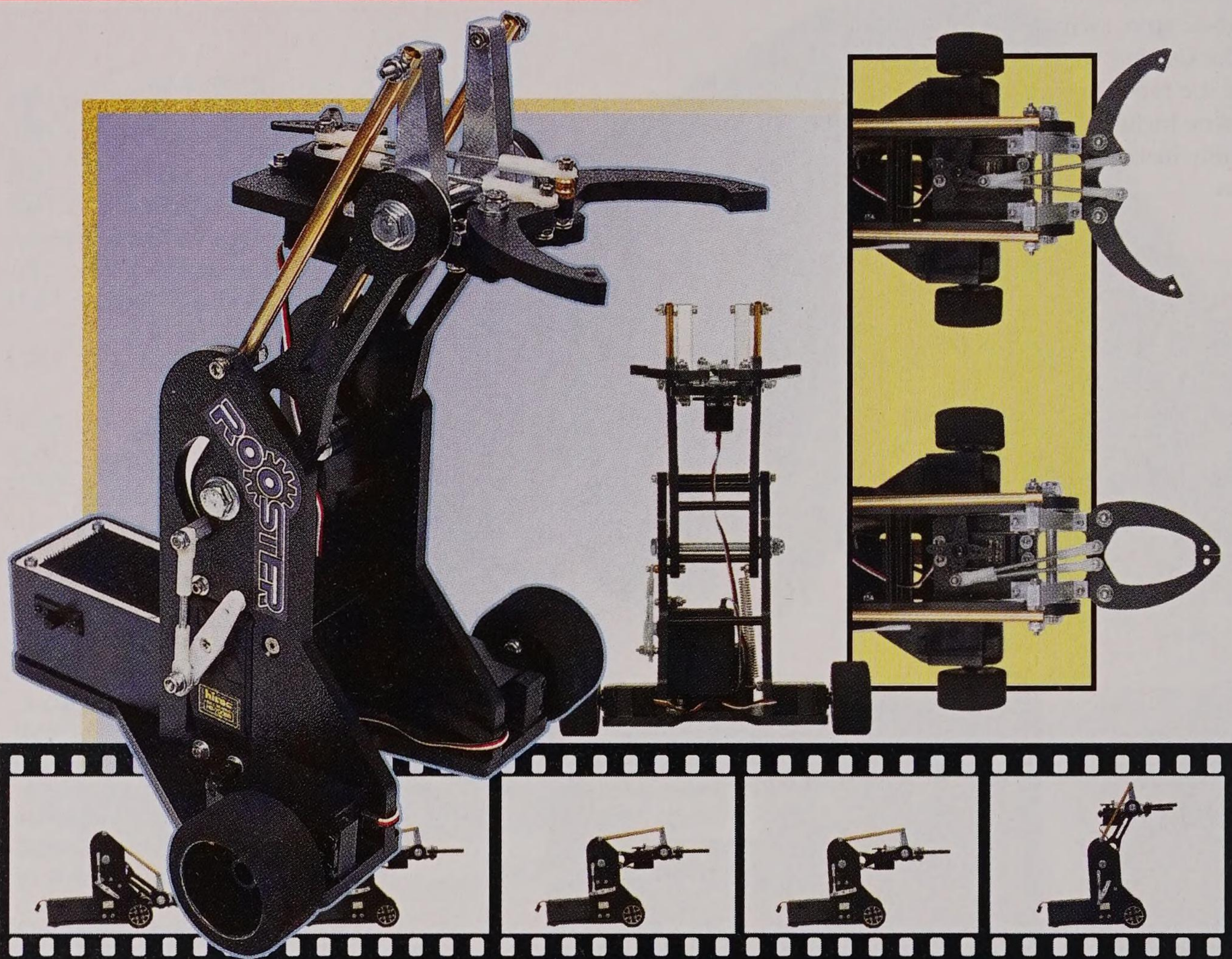


PITSCO ROOSTER R/C ROBOT

This radio-controlled robot is really something to crow about! It's a highly mobile and maneuverable device for manipulating and transporting objects.

The *Rooster* is the tool for giving students a dynamic, hands-on robotics experience! Rugged construction ensures that the *Rooster* will withstand continuous student use.

Includes a radio transmitter, integrated rechargeable battery pack, charger, detailed instructions, and exciting robotics activities. Robot base dimensions: 8" wide and 7-1/2" long. Maximum gripper height is 9".

L717273—$645

Buy 2 for $1,075

ROVER

PITSCO LUNAR ROVER

At last, a computer-interfaced robot that is made from quality components and isn't anchored to a table or burdened by cumbersome cables. The *Lunar Rover* is controlled remotely by a PC-compatible computer and a radio transmitter. An easy-to-use software interface enables students to manually control the *Rover* with keystrokes. Or, students can program a sequence using easily mastered commands. The *Lunar Rover* comes with everything you need – rechargeable battery pack and charger, transmitter with interface cable and AC adapter, and software on a 3-1/2" disk. Can also be controlled manually. Dimensions: 10" long, 8" wide, and 4" high.

L754062—$595

FreeFax™ Orders!
888-534-6784

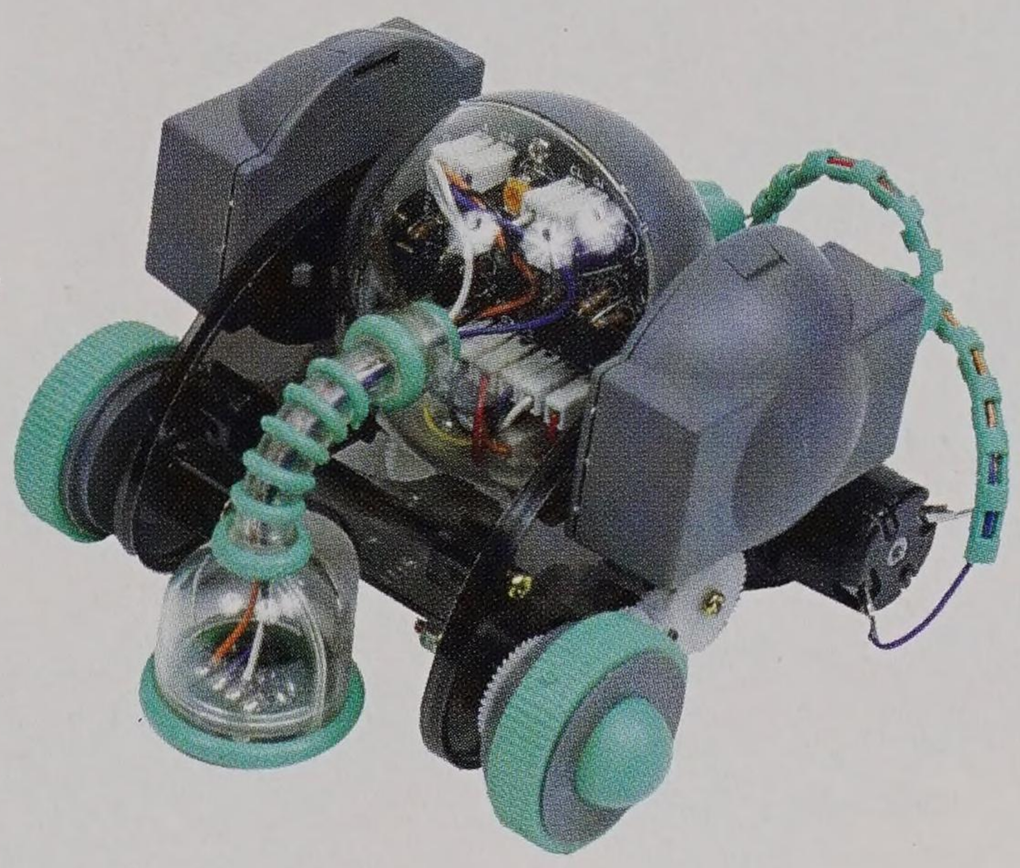
MOVIT ROBOTS

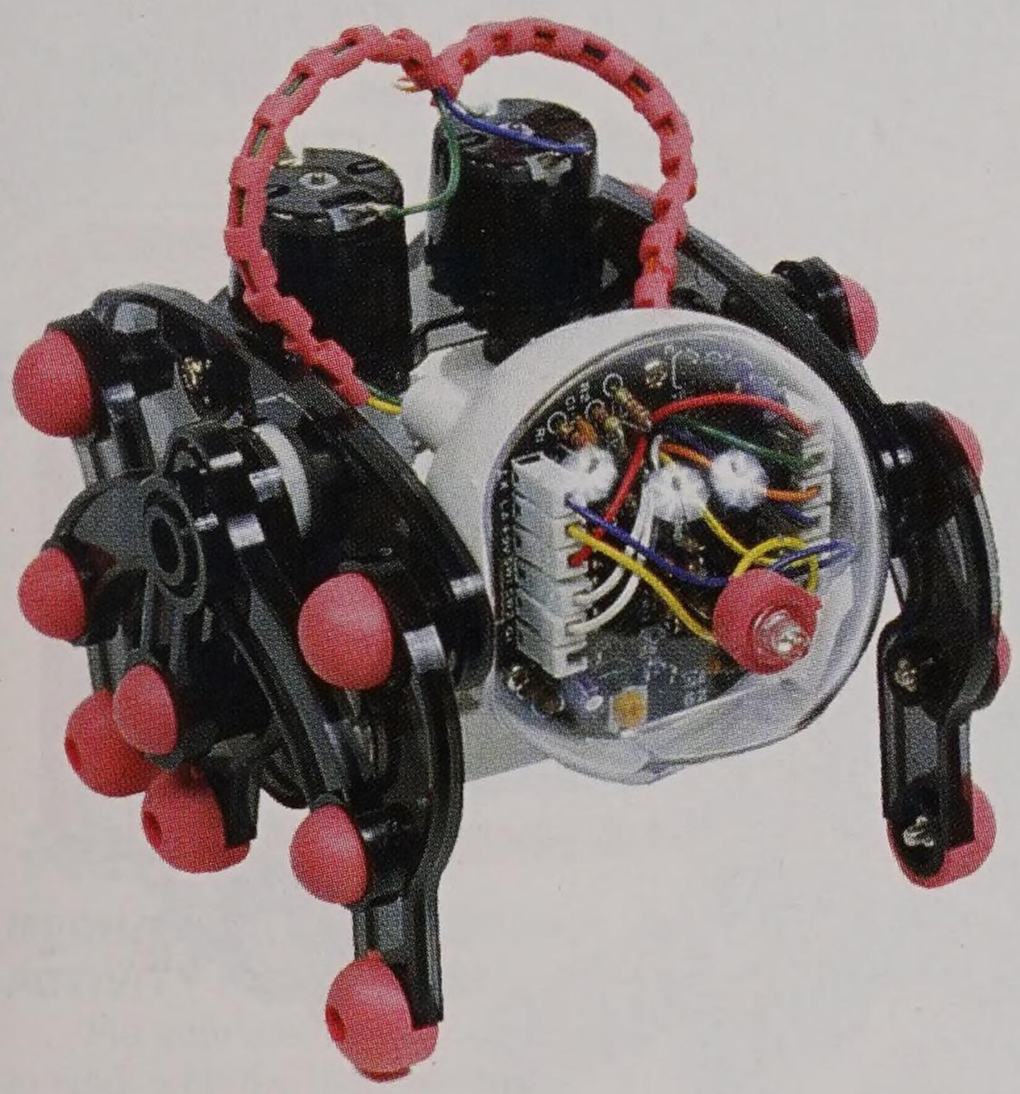
ROBOLAB
Overview 2-3
ROBOLAB
Starter System 4-5
Team Challenge. 6-7
Cities & Transportation/
Amusement Park . . . 8-9
Intelligent House . 10-11
ROBOLAB
Investigator 12-13
Red Rover,
Red Rover 16-17
Control Lab. 18-19
Brutus 20-21

LINE TRACKER

A robot that follows a black line drawn on white paper. The eye of the *Line Tracker* is a photo interrupter that projects and receives infrared rays. Black absorbs infrared rays; white reflects them. Features preassembled printed circuit board. Power source is two AA batteries and one 9-volt battery. Batteries sold separately. For ages 10 and up.

L751104 Unassembled—$78
L751105 Assembled—$130
L751839 Unassembled, requires soldering—$72
L751046 AA Batteries (pkg of 2)—$2.65
L751050 (9volt, pkg of 1)—$3.95





SPIDER (INFRARED SENSOR)

An intelligent robot that knows how to avoid interference. This robot emits an infrared beam that detects an obstacle in front, turns left, and continues.

L751397 Unassembled—$81
L751398 Assembled—$125

HYPERPEPPY

Students will be thrilled and amazed when they build and operate this sound-sensitive robot. *Hyperpeppy* is a robot with a built-in sensor that reacts to vibration from sound or physical contact. It moves forward, but when it senses a high-pitched noise (such as a hand clap) or vibration from physical contact with an obstacle, it retreats by reversing and turning left for a preset time and then continues forward on a new course. Electronic board is preassembled.

L753002 Unassembled—$29
L754193 Assembled—$54

PITSCO LEGO dacta
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24 Mechanical Engineering

New

MECHANICAL ENGINEERING SET #979665

Provide a natural conceptual and contextual progression from motorized machines to computerized or automated mechanisms using your existing *Motorized Simple Machines Set*.

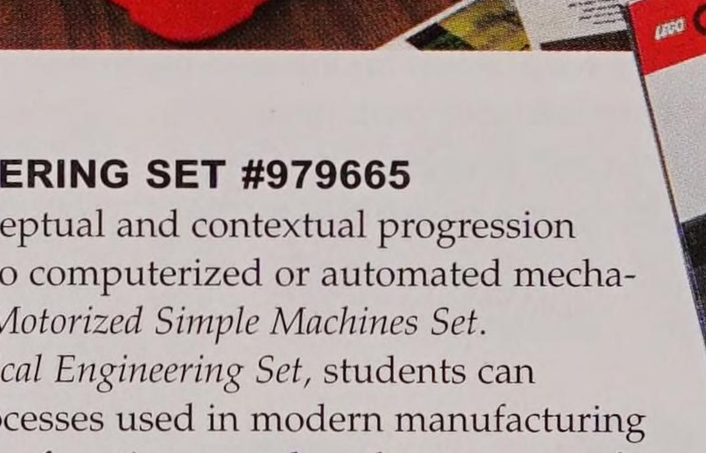
By adding the *Mechanical Engineering Set*, students can explore the many small processes used in modern manufacturing plants and examine the role of motion, speed, and movement of parts in the production of finished products. By integrating the myriad of small processes into large-scale applications, students gain insight into the complexity of large-scale manufacturing processes.

Usage is adaptable to a variety of age groups and can be integrated into technology, physical science, or physics curriculum.

The set contains more than 300 pieces and includes building instructions for specific mechanisms such as robot arms and conveyers that are commonly used in large assemblies. A storage box for all the parts is included. Requires six AA batteries, sold separately.

L979665—$139

Available March 1, 2001



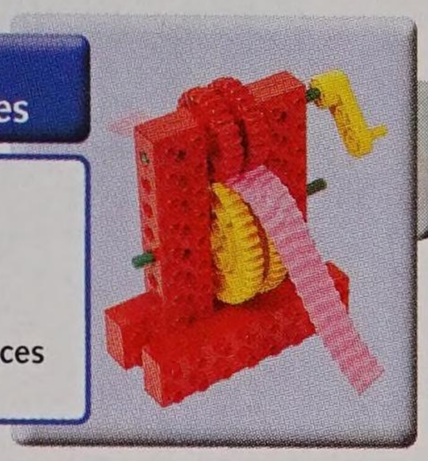
L751046 AA Batteries (pkg of 2)—$2.65

Order Online!
www.pldstore.com

Contains:

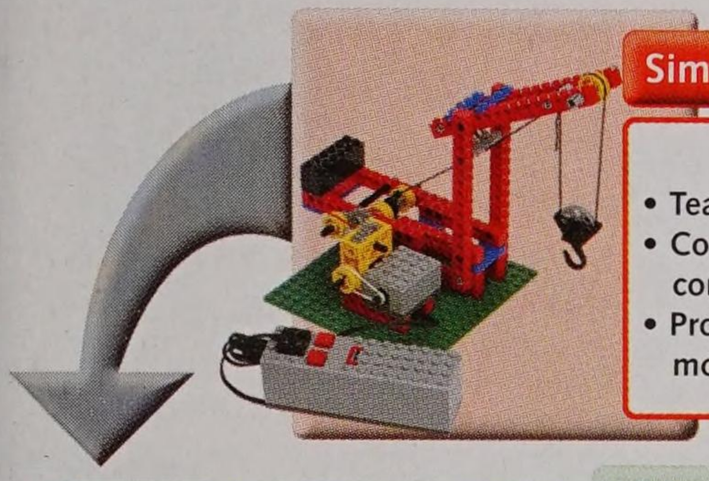
- LEGO 9-volt Gear Reduction Motor
- Battery box and connecting lead
- Pneumatic elements such as cylinders, tubing, and a valve
- Differential and clutch gears
- Compound beveled gears
- Large gear racks
- Pole-reversing switch
- 6 full-color booklets that include step-by-step instructions for building 24 LEGO models
- *Design Challenge* booklet containing 12 problem-solving, black-and-white illustrations that supplement design challenge activities from the *Mechanical Engineering Activity Pack* (#909655)
- Storage box
- *Big Machines* video on CD-ROM that features real-life footage of manufacturing processes and mechanical devices

From Simple Machines To Robots
Essential Concepts & Experiences K-12



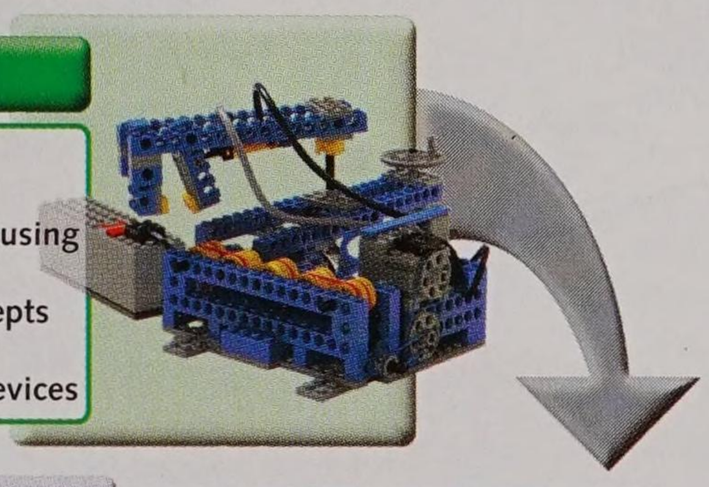
Early Simple Machines & Simple Machines Mini-Series

Grades K-3
- Team or 'centers' approach
- Introduce students to simple machines, force and motion
- Provide initial hands-on experiences with simple machines



Simple and Motorized Machines

Grades 4-9
- Team approach
- Comprehensive simple machine concepts reinforced
- Provide hands-on experiences in models of 'real-world' devices

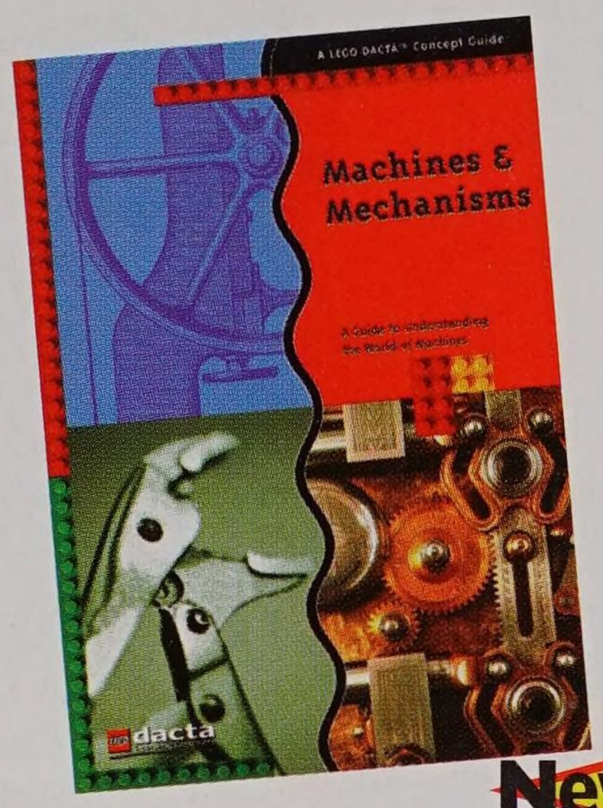


Mechanical Engineering

Grades 8-12
- Team approach
- Engineering principles promoted using simple and compound machines
- Introduces machine control concepts
- Provide hands-on modeling of controlled compound machine devices

ROBOLAB

Grades 8-12
- Team approach
- Robotic concepts explored and investigated
- Advanced control concepts utilized
- Provide hands-on modeling and computer control of robotic devices through open-ended problem solving



New

MACHINES & MECHANISMS CONCEPT GUIDE #900042

This colorful, informative, 23-page booklet is a fact-filled introduction to machines and mechanisms designed especially for elementary and middle school teachers. The content provides an excellent background for teachers who are using any of the LEGO Dacta machine sets including *Early Simple Machines*, *Motorized Simple Machines*, and *Mechanical Engineering*.

L900042—$17.50

Available March 1, 2001

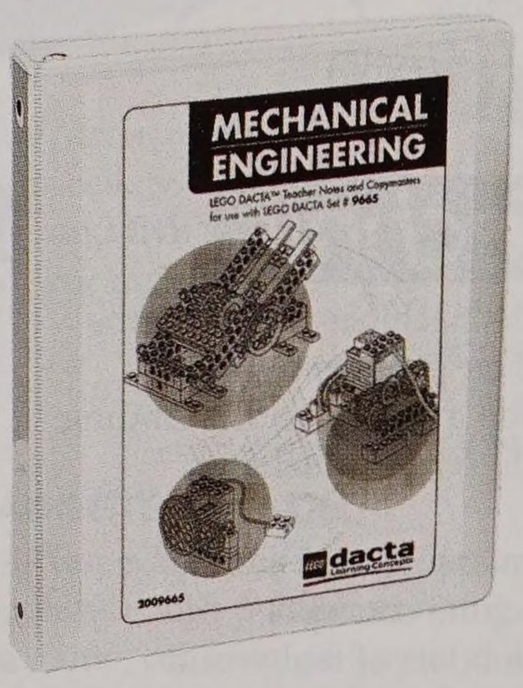
- *Mechanical Engineering 24-25*
- *Motorized Simple Machines 26-27*
- *Wheels & Axles/ Gears 28-29*
- *Levers/Pulleys. . . . 30-31*
- *Early Simple Machines 32-33*
- *LEGO Designer . . 34-35*
- *Mousetrap Vehicles. 42-43*

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

New

MECHANICAL ENGINEERING ACTIVITY PACK #909655



Put your *Mechanical Engineering Set* to work with the 16 investigation activities and 12 design challenges included in this 100-page book.

Investigation Activities: Demonstrate the basics of motion and force with investigation activities – structured lessons, worksheets, and "minichallenges" designed for groups of two or three students. Students first build a LEGO model according to instructions, and then adapt the model to meet specific criteria.

Design Challenges: Move on to design challenges – building projects that require teams of students to solve more difficult problems using the concepts acquired during the investigation activities. These teams create complex, working mechanical systems that often require multiple *Mechanical Engineering Sets*.

L909655—$25

Available March 1, 2001

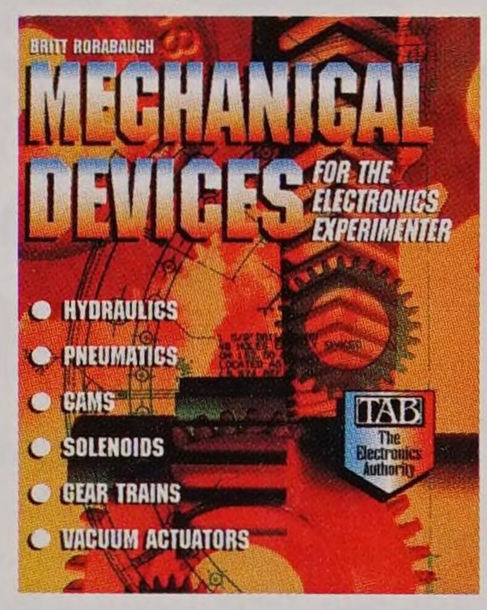
MECHANICAL DEVICES FOR THE ELECTRONICS EXPERIMENTER

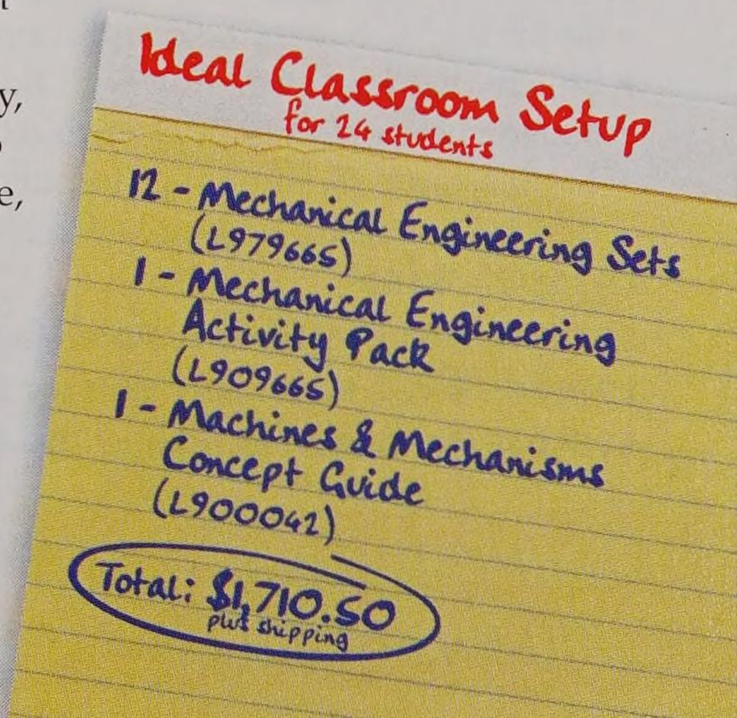
This textbook on basic mechanical principles explains how to design various mechanical devices, including solenoids, gears and pulleys, and pneumatic and hydraulic systems, but it does not provide plans for entire projects. It is heavily oriented toward robotics but can be used by any experimenter. To increase the fun and decrease the wait between concept and reality, the reader is encouraged to "design a little, build a little, test a little," and then repeat the process. Good illustrations. Paperback, 237 pages.

Level: High School-Adult

L756591—$19.95

New





PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

26 Motorized Simple Machines

LEGO Technic

MOTORIZED SIMPLE MACHINES SET #979645

This 219-element set is a wide-ranging tool for exploring simple machines and adds the concept of motorization. A 9-volt motor enables students to bring their projects to life. Through the building of realistic motorized models, students develop a strong understanding of mechanical principles. The set is designed for students working in pairs. It includes:

- 9-volt motor, battery box, and connecting lead
- Sturdy plastic storage tray with lid for easy classroom cleanup, inventory, and storage
- 8 green cards with building projects for exploration of simple machine concepts
- 10 blue cards for applying simple machine concepts by building models of real-world devices including folding lawn chair, drawbridge, conveyor belt, turnstile, crane, and more

L979645—$105

L979630 Nonmotorized Simple Machines Set—$80

L979615 9-volt Motor and Battery Box (requires 6 AA batteries, sold separately)—$30

L751046 AA Batteries (pkg of 2)—$2.65

Best Buy!

MOTORIZED SIMPLE MACHINES TECHNOLOGY PACK #901185

This pack contains enough materials for 10 students working in pairs, plus free teacher support materials. Includes:

- 5 *Motorized Simple Machines Sets* (#979645)
- *Simple and Motorized Machines Activity Pack* (#979631)

L901185—$535

Call Toll Free!
800-362-4308

EXCLUSIVE

SIMPLE AND MOTORIZED MACHINES ACTIVITY PACK #979631

This literature pack is designed to provide teachers the materials they need to teach students the principles of simple and motorized machines using the *Motorized Simple Machines Set* #979645. The pack includes:

- An 80-page teacher's guide divided into six progressive units. The guide provides background information, key words and concepts, sample solutions, and ideas for additional activities.
- The 31 worksheet copy masters cover activities that focus on exploring, investigating, and problem solving. Each worksheet is designed to take approximately 45 minutes.

L979631—$39

SPANISH VERSION

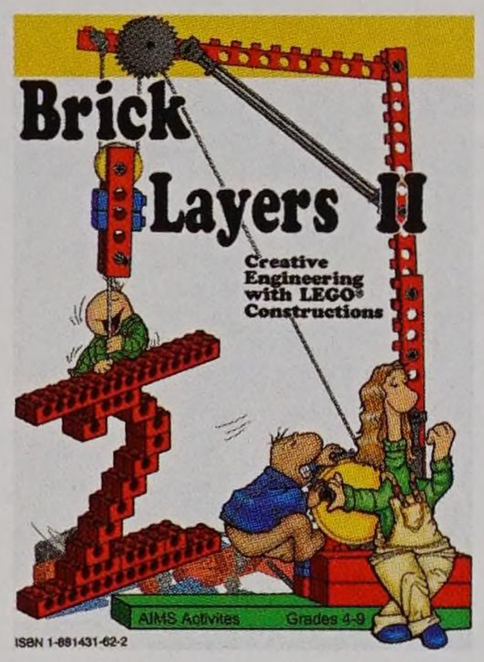
L209631—$39

New

SOLAR ADD ON #979636

Go solar with the *Solar Add On* and the *Motorized Simple Machines Set*. Package includes a LEGO solar cell, two three-meter long wires, one open-ended problem, and five activities supplemented by a four-color activity card. For more great energy-related products, see pages 48-51.

L979636—$49



BRICK LAYERS II: CREATIVE ENGINEERING WITH LEGO CONSTRUCTIONS

This book is written to be used along with LEGO DACTA Kits #979645 and #979630 (pg 26). The activities give students the opportunity to explore areas of mechanical engineering, through simple machines and structural engineering as they look at the special properties of certain shapes that make them useful in construction.
Level: Intermediate-Middle School

L990244—$25

Mechanical Engineering 24-25
•*Motorized Simple Machines 26-27*
Wheels & Axles/ Gears 28-29
Levers/Pulleys. . . . 30-31
Early Simple Machines 32-33
LEGO Designer . . 34-35
Mousetrap Vehicles. 42-43

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

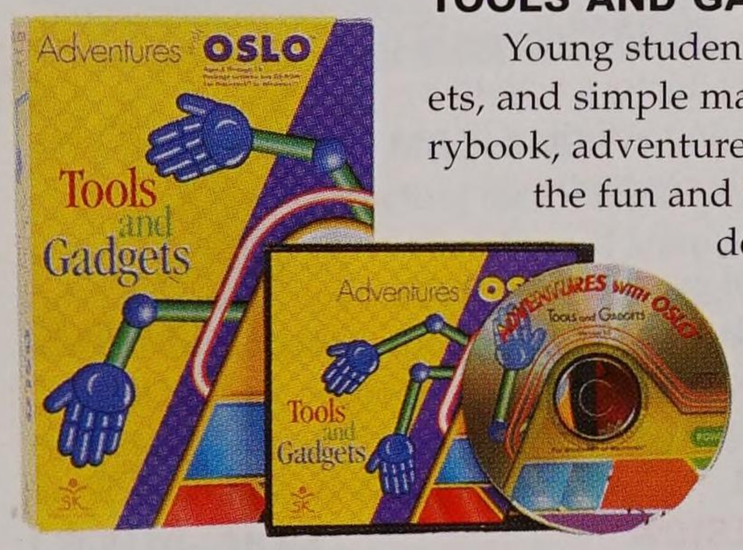
SPEED COMPUTER #979637

New

Introduce your students to math concepts involving speed, distance, and time by adding the *Speed Computer* to your existing *Motorized Simple Machines Set*. Use it as a speedometer to measure speed in rpms, km/h, or mph, or as a stop watch to measure distance in rotations, meters or feet. Package includes a speed computer, suggestions for using the product, and eight activities supplemented by a four-color activity card.

L979637—$26.50

TOOLS AND GADGETS CD-ROM



Young students (ages 5-14) will have fun learning about tools, gadgets, and simple machines with this entertaining software. An animated storybook, adventure game, coloring gallery, and a maze arcade are some of the fun and innovative methods *Tools and Gadgets* uses to teach students about simple machines.

Also includes an interactive database that uncovers the six classes of simple machines – the inclined plane, screw, pulley, wheel and axle, lever, and wedge.
Level: Early Learning-Middle School

L752615 Macintosh/Windows CD-ROM—$40

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

Ideal Classroom Setup
for 24 students

12 - Motorized Simple Machines Sets (L979645)
1 - Simple and Motorized Machines Activity Pack (L979631)
1 - Brick Layers II (L990244)
1 - Machines by VanCleave (L715808) pg 31
1 - The Way Things Work CD-ROM (L754534) pg 36
1 - Each of Simple Machines Posters pg 37
1 - Simple Machine and Work Video Series (L990213) pg 37

Total: $1,598.65 plus shipping

28 Wheels & Axles/ Gears

TECHNIC WHEELS AND AXLES MINI SET #779616

75 elements

This set provides hands-on learning about single and separate axles, steering, rollers, winch handles, and friction. *Wheels and Axles Mini Set* is designed to be used by students working in pairs. It includes:

- 2 building cards with pictorial instructions
- Sturdy plastic storage case with clear compartmentalized tray
- Pictorial parts list to make cleanup and inventory simple

L779616—$17.25

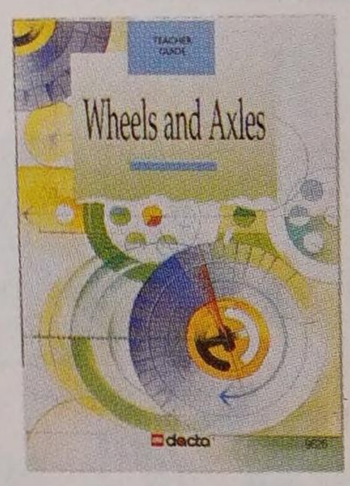
Best Buy!

WHEELS AND AXLES CLASS PACK #779646

Hands-on learning for 24 students (working in pairs) with teacher-support materials are included in this convenient pack.

- 12 *Wheels and Axles Mini Sets* (#779616)
- 20-page *Teacher Guide* (#779626)
- Individual storage case with each set

L779646—$202



WHEELS AND AXLES TEACHER GUIDE #779626

This 20-page guide contains 10 lesson plans, introductory activities, and problem-solving activities based on wheel and axle concepts.

Also contains:

- Photographs of everyday devices that use wheels and axles
- Suggested problem solutions
- Assessment ideas

L779626—$6.25

SPANISH VERSION

L209626—$6.25

FreeFax™ Orders!
888-534-6784

Mechanical Engineering 24-25
Motorized Simple Machines 26-27
• *Wheels & Axles/ Gears 28-29*
Levers/Pulleys. . . . 30-31
Early Simple Machines 32-33
LEGO Designer . . 34-35
Mousetrap Vehicles. 42-43

LEGO Technic

TECHNIC GEARS MINI SET #779610

67 elements

Using the two activity cards, students build a merry-go-round and a fan. Both models demonstrate how gears can multiply speed. By counting the number of turns and rotations, students can calculate the gear ratios. *Gears Mini Set* is designed to be used by students working in pairs. It includes:

- 2 building cards with step-by-step instructions
- Sturdy plastic storage case with clear compartmentalized tray
- Pictorial parts list to make cleanup and inventory simple

L779610—$17.25

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

Best Buy!

GEARS CLASS PACK #779640

This pack contains enough materials for 24 students (working in pairs) to discover the basic principles of gears. Includes:

- 12 *Gears Mini Sets* (#779610), each with its own plastic storage case
- 20-page *Teacher Guide* (#779620)

L779640—$202

GEARS TEACHER GUIDE #779620

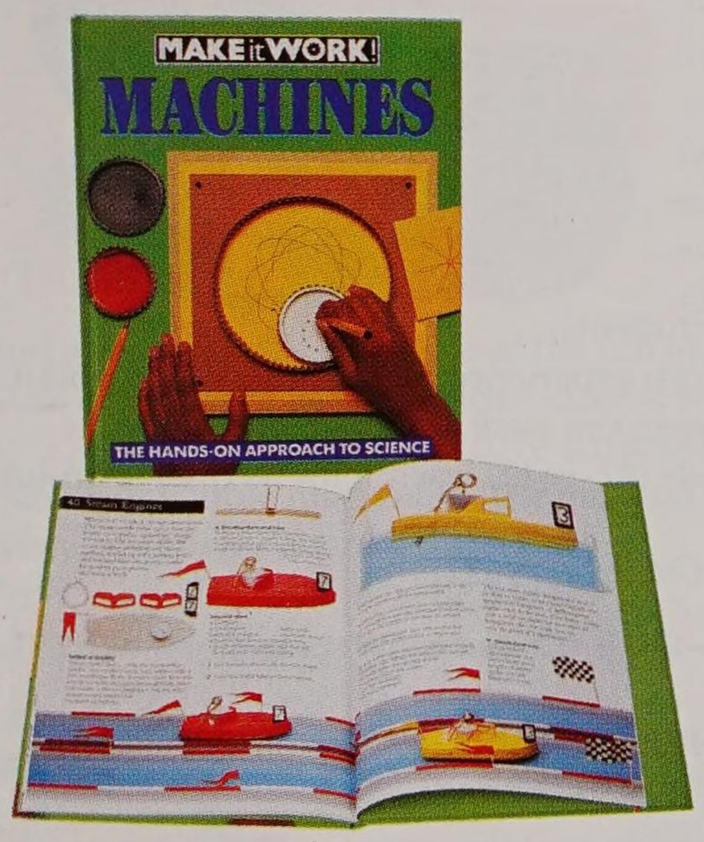
This 20-page guide contains 10 lesson plans, introductory gear activities, and problem-solving activities based on gear concepts. Also contains:

- Photographs of real-world gear devices
- Background information
- Suggested problem solutions
- Assessment ideas

L779620—$6.25

SPANISH VERSION

L209620—$6.25

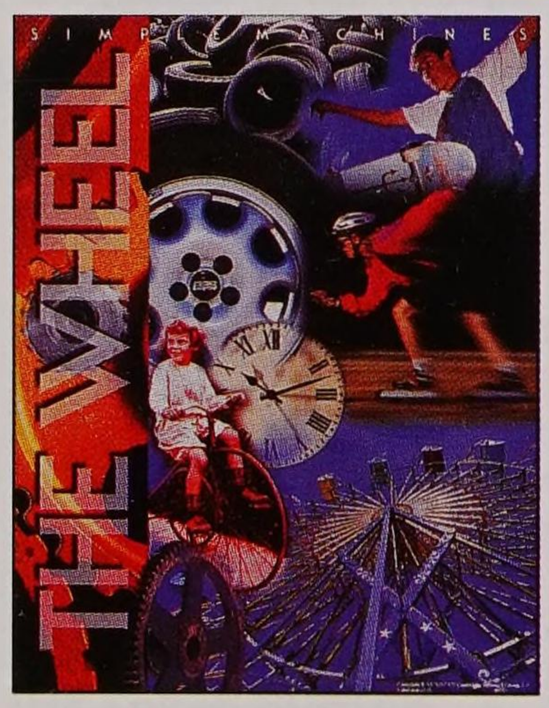


MAKE IT WORK! MACHINES

Through conducting their own experiments, students discover scientific principles! They'll learn answers to puzzling questions – Why do bicycles have gears? What makes a pendulum swing? How do pulleys make heavy loads lighter? They'll build a popcorn dispenser, drawing enlarger, marble-operated clock, and a cool rocket. Paperback, 48 pages.

Level: Intermediate-Middle School

L752170—$6.95

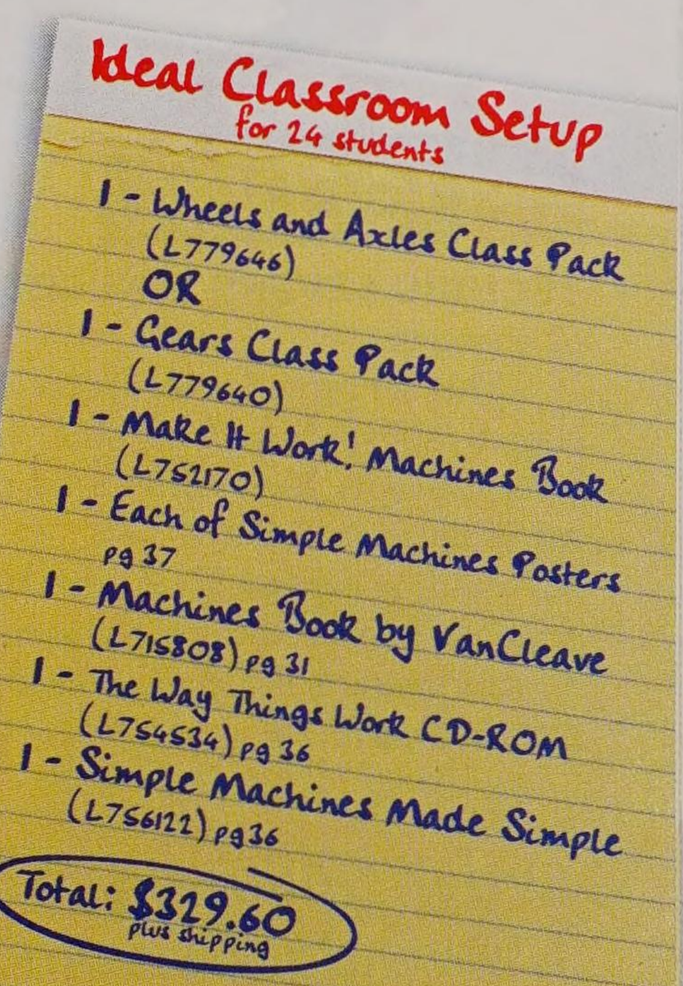


THE WHEEL POSTER

Size: 17" x 22".

L756050—$5.95

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION



30 Levers/Pulleys

LEGO Technic

TECHNIC LEVERS MINI SET #779612

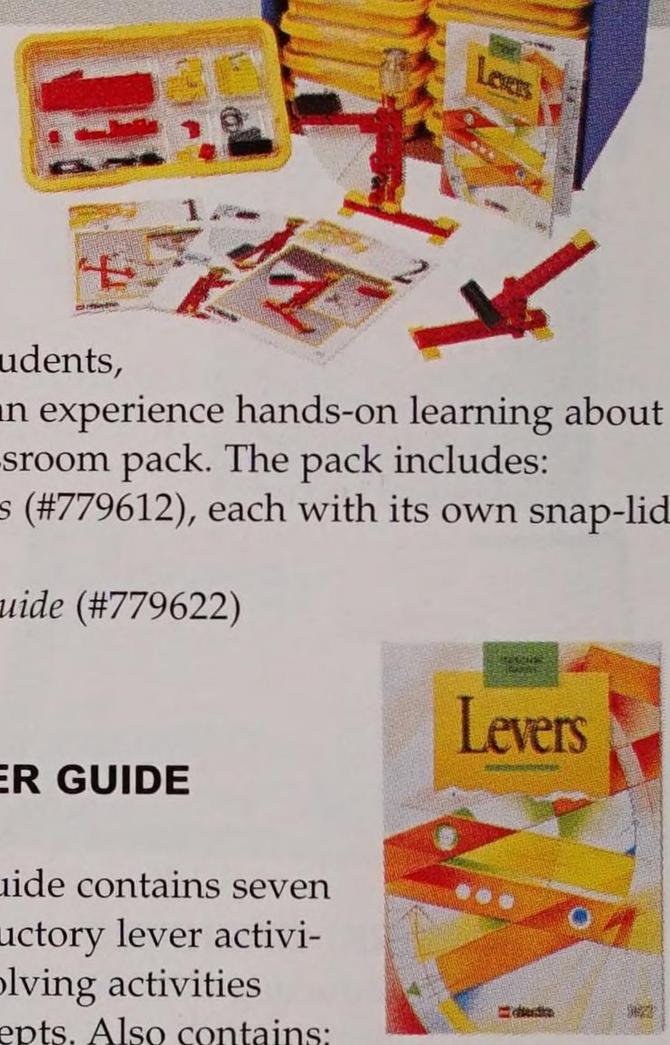
62 elements

This set provides hands-on experience in working with the three classes of levers. Students build two exciting projects and learn important lever concepts. *Levers Mini Set* is designed to be used with students working in pairs. It includes:

- 2 building cards with pictorial instructions
- Sturdy plastic storage case with clear compartmentalized tray
- Pictorial parts list to make cleanup and inventory simple

L779612—$17.25

Be$t Buy!



LEVERS CLASS PACK #779642

Twenty-four students, working in pairs, can experience hands-on learning about levers with this classroom pack. The pack includes:

- 12 *Levers Mini Sets* (#779612), each with its own snap-lid storage case
- 20-page *Teacher Guide* (#779622)

L779642—$202

LEVERS TEACHER GUIDE #779622

This 20-page guide contains seven lesson plans, introductory lever activities, and problem-solving activities based on lever concepts. Also contains:

- Photographs of real-world lever devices
- Background information
- Suggested problem solutions
- Assessment ideas

L779622—$6.25

SPANISH VERSION

L209622—$6.25

Order Online!
www.pldstore.com

Mechanical Engineering 24-25
Motorized Simple Machines 26-27
Wheels & Axles/ Gears 28-29
•*Levers/Pulleys. . . . 30-31*
Early Simple Machines 32-33
LEGO Designer . . 34-35
Mousetrap Vehicles. 42-43

TECHNIC PULLEYS MINI SET #779614

75 elements

Students build and work with models to investigate fixed and movable pulleys and belt drives. The set is designed to be used by students working in pairs. It includes:

- 2 building cards with step-by-step instructions
- Sturdy plastic storage case with clear compartmentalized tray
- Pictorial parts list to make cleanup and inventory simple

L779614—$17.25

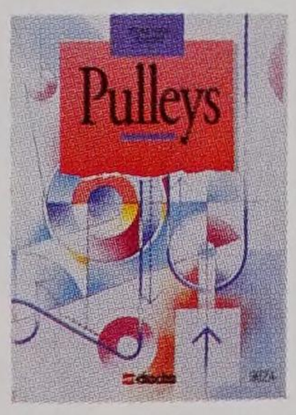
Best Buy!

PULLEYS CLASS PACK #779644

This pack delivers the hands-on learning of the *Pulleys Mini Set* to the entire class! Serves 24 students working in teams of two.

- 12 *Pulleys Mini Sets* (#779614)
- 20-page *Teacher Guide* (#779624)
- Individual storage case with each set

L779644—$202



PULLEYS TEACHER GUIDE #779624

This 20-page guide contains 12 lesson plans, introductory pulley activities, and problem-solving activities based on pulley concepts. Also contains:

- Photographs of real-world pulley devices
- Background information for each subject
- Suggested problem solutions
- Assessment ideas

L779624—$6.25

SPANISH VERSION

L209624—$6.25

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

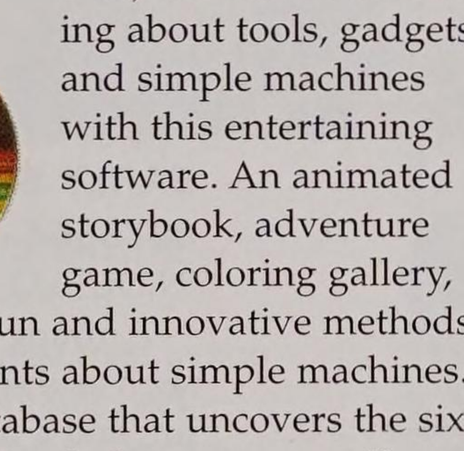
TOOLS AND GADGETS CD-ROM

Young students (ages 5-14) will have fun learning about tools, gadgets, and simple machines with this entertaining software. An animated storybook, adventure game, coloring gallery, and a maze arcade are some of the fun and innovative methods *Tools and Gadgets* uses to teach students about simple machines.

Also includes an interactive database that uncovers the six classes of simple machines – the inclined plane, screw, pulley, wheel and axle, lever, and wedge.

Level: Early Learning-Middle School

L752615 Macintosh/Windows CD-ROM—$40



MACHINES

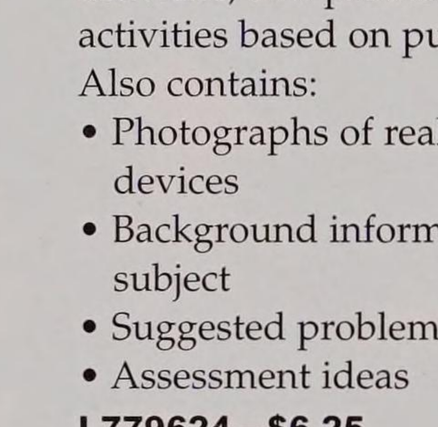
Janice VanCleave

In her own special style, VanCleave brings us this fact-filled book about machines.

This is a great introduction of the scientific principles of simple machines in an easy-to-read format. Have this book available for student reading and as a resource for hands-on activities about machines. Paperback, 87 pages.

Level: Intermediate-Middle School

L715808—$10.95



THE LEVER POSTER

Size: 17" x 22".

L756055—$5.95

THE PULLEY POSTER

Size: 17" x 22".

L756052—$5.95

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

Ideal Classroom Setup
for 24 students

1 - Levers Class Pack (L779642)
OR
1 - Pulleys Class Pack (L779644)
1 - Make It Work! Machines Book (L752170) pg 29
1 - Each of Simple Machines Posters pg 37
1 - Machines Book by VanCleave (L715808)
1 - The Way Things Work CD-ROM (L754534) pg 36
1 - Simple Machines Made Simple (L756122) pg 36

Total: $329.60 plus shipping

32 Early Simple Machines

EARLY SIMPLE MACHINES SET #779654

99 DUPLO elements

Young children build fun and simple models, such as a seesaw, rolling vehicle, hand-operated lift, and a merry-go-round. By playing with and manipulating the models, they experience pulleys, levers, gears, and wheels and axles. The set is designed for use by teams of 2-3 children. It includes:

- Full-color activity cards with pictorial instructions for 14 models
- Plastic bin for easy cleanup and storage

L779654—$96

EARLY SIMPLE MACHINES TEACHER'S GUIDE #209664

Designed to supplement the *Early Simple Machines Set*, this 36-page teacher's guide has excellent suggestions for introducing science concepts, hands-on exploration, and thematic activities.

L209664—$21.50

Call Toll Free!
800-362-4308

Mechanical Engineering 24-25
Motorized Simple Machines 26-27
Wheels & Axles/ Gears 28-29
Levers/Pulleys. . . . 30-31
• *Early Simple Machines 32-33*
LEGO Designer . . 34-35
Mousetrap Vehicles. 42-43

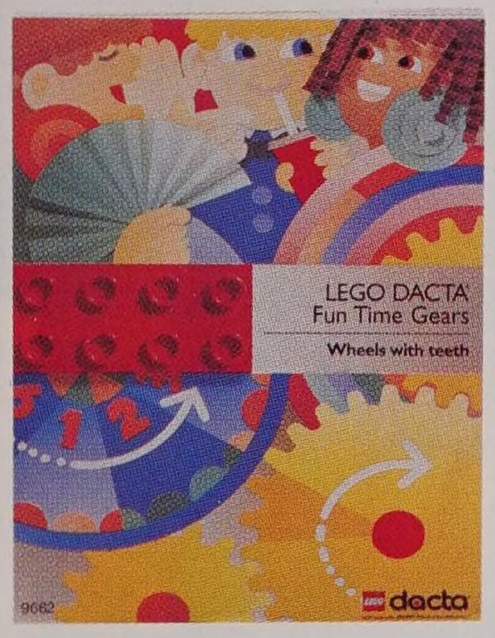
FUN TIME GEARS SET #779652

32 DUPLO elements

Students explore gears by building three models: a hand-operated paper crimper, top and spinner, and a turntable pattern maker. Students can use the paper crimper and pattern maker to make colorful, creative art projects! The set is designed to be used by a pair of students. It includes:

- 2 full-color activity cards with three projects
- Plastic storage bin

L779652—$43.75



FUN TIME GEARS TEACHER'S GUIDE #779662

An excellent supplement to the *Fun Time Gears Set*. Contains thematic ideas, science concepts, and methods for discovering gears in everyday machines. Also includes support for the activities, art projects, and more. Paperback, 20 pages.

L779662—$6.25

FUN TIME GEARS II SET #779655

46 DUPLO elements

A follow-up to the *Fun Time Gears Set*, this new set allows students to progress even further! *Fun Time Gears II* introduces new key elements, giving a whole new range of models for student exploration. Models include the Drill, Cruncher, Gate, and Bike.

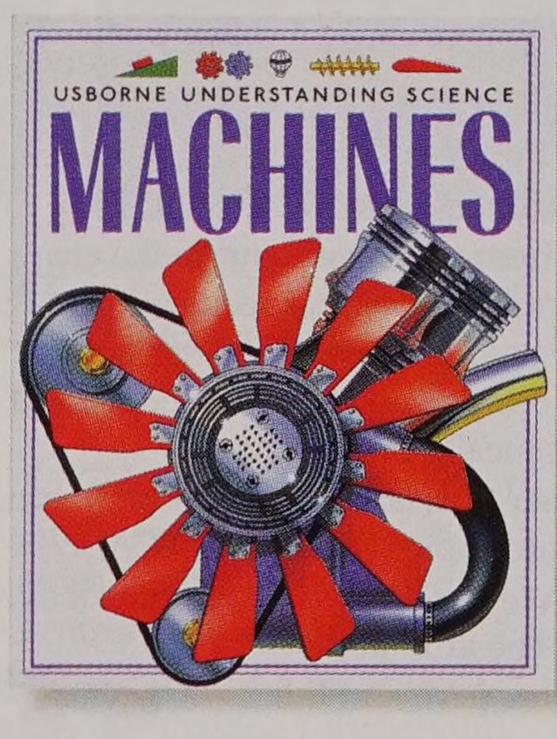
- A pair of students team up to discover gear concepts
- 3 full-color laminated building cards
- Plastic storage bin

L779655—$52.50

FUN TIME GEARS II TEACHER'S GUIDE #209665

An excellent 20-page idea book designed to supplement the *Fun Time Gears II Set*. Contains background information about gears and how they are used in the real world.

L209665—$6.25



USBORNE: MACHINES

What do a pair of scissors and a satellite have in common? Find out in this fascinating book that explains everything from what machines do to how they help people daily. Includes a glossary of terms and colorful illustrations. Land machines, flying machines, time machines, the human machine . . . they're all included! Paperback, 32 pages.

Level: Intermediate-Middle School

L756061—$6.95

INVENTION BOOK

This book explains each step of the process of being an inventor.

Invention uniquely discusses the fundamentals of setting up a workshop; building models of the invention; creating a name for it; plus record keeping, planning, packaging, and marketing. This book leads students ages 10 and up directly into the world of creativity. Paperback, 207 pages.

Level: Intermediate-Middle School

L753129—$10.95

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

Ideal Classroom Setup
for 24 students

6 - Early Simple Machines Sets (L779654)
1 - PSM Teacher's Guide (L209664)
1 - Invention Book (L753129)

Total: $608.45 plus shipping

34 LEGO Designer

LEGO DESIGNER CD-ROM #900070 New

Provide early exposure to computer-aided design with *LEGO Designer*, software that enables children to design and build LEGO models in a virtual environment.

The virtual parts bin contains elements from LEGO's *Simple and Motorized Machines*, *Team Challenge* (including the *RCX* brick), *Amusement Park*, and *Structures* sets. Students pull parts from the bin to construct a model on the screen. They can manipulate their design in 3-D, rotate it to view from all angles, and make changes on the fly. High-quality, printable LEGO blueprints and design specifications of their virtual model, including a list of parts, can be printed and used to construct the actual structure. Students can even calculate the costs of building the model and communicate their ideas to other students electronically or in print!

The icon-based, point-and-click graphical user interface is easy for beginning designers to use, and improved features offer more choices than *LEGO CAD*. Students have more design elements from which to choose and more control over editing, subassembly grouping, and connectors. The animation function is easier to handle, brick colors can be changed, and the help function is upgraded.

LEGO Designer is an excellent way to teach engineering design and information technology while having fun with America's favorite early-learning tool – LEGO products! Ages 8 and up.

L900070 Win/Mac—$49

Available March 1, 2001

LEGO DESIGNER SOFTWARE SITE LICENSE #900071

L900071 Win/Mac—$189

Available March 1, 2001

LEGO DESIGNER CLASS PACK #970027

This pack includes:

- 12 *Motorized Simple Machines Sets* (#979645)
- 1 *Simple and Motorized Machines Activity Pack* (#979631)
- 1 *LEGO Designer Site License* (#90071)

L970027—$1,470

Available March 1, 2001

FreeFax™ Orders!
888-534-6784

LEGO designer

Software functions enable students to:

- Design, build, and manipulate a 3-D LEGO model on a computer screen.
- Change the view with a click of the mouse.
- Rotate the model around or up and down. Click to show a top-down view.
- Change the color or omit color altogether and show only black lines.
- Modify the design instantly on-screen.
- Create, print, and share building specifications.
- Keep an activity journal online.
- Respond to instructor's on-screen questions and assignments.

Students reinforce computer skills and learn:

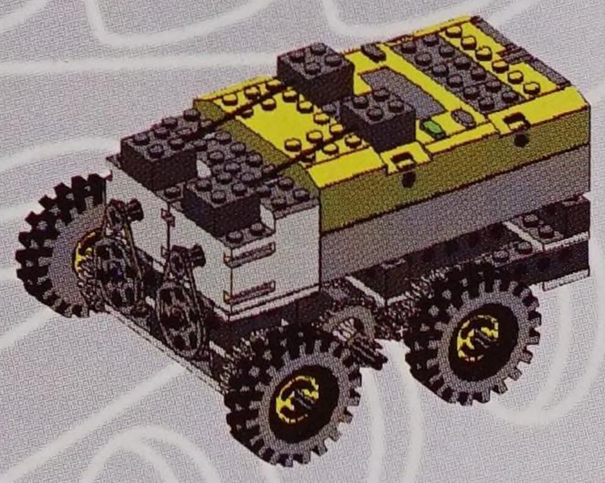
- About mechanisms and simple machines.
- To plan, document, record, and share design solutions.
- The basics of computer animation.
- To estimate building costs.
- How to export their work to other applications, e.g. DTP.

Improvements over *LEGO CAD*

- Supports more LEGO building sets – *Motorized Simple Machines*, *Team Challenge*, *Amusement Park*, and *Structures*
- Subassemblies may be stored in the assemblies bin
- More control over what connectors to use
- Easier-to-use animation function
- Printable building specifications
- Expanded help function

System Requirements

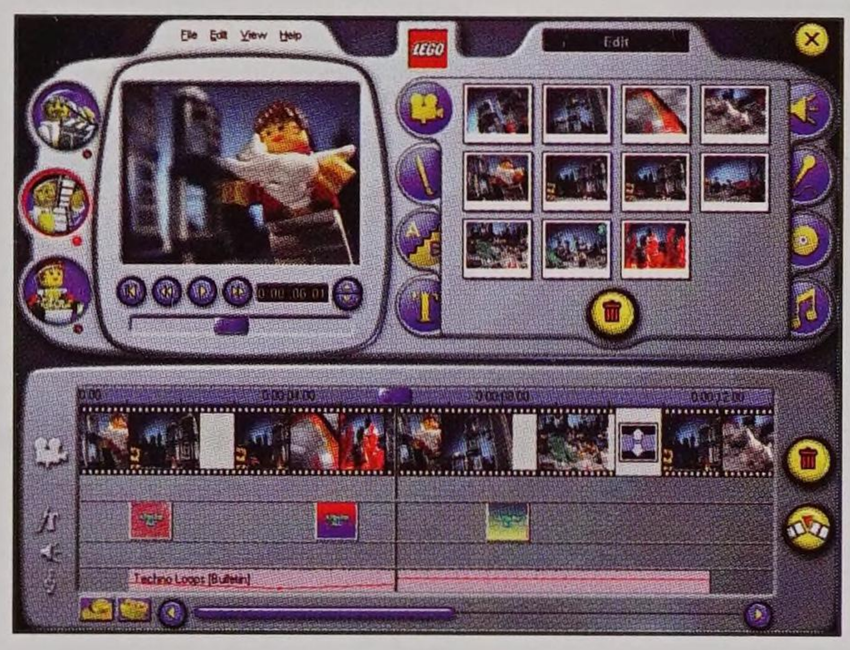
Macintosh: PowerPC and higher; OS 8.0 and higher
PC: Pentium and higher; Windows 95, 98, and NT



Mechanical Engineering 24-25
Motorized Simple Machines 26-27
Wheels & Axles/ Gears 28-29
Levers/Pulleys. . . . 30-31
Early Simple Machines 32-33
• *LEGO Designer* . . 34-35
Mousetrap Vehicles. 42-43

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html



New

LEGO STUDIOS CAMERA AND SOFTWARE #979647

Lights, camera, action – it's showtime! With *LEGO Studios*, children ages 8-16 can bring to life their knowledge of virtually any subject and present their handiwork on a computer, in an e-mail, or on the Internet.

After selecting a topic, students plan their movie, build LEGO movie sets, and shoot footage and dialog with the camera. Zoom in as close as one inch, create stop animation, or pan – the camera has full-motion video and digital still modes. Shots can be edited on the fly or later using the kid-friendly editing software to add transitions, sound effects, titles, and background music from the included "Smart Sound Library" or a favorite CD.

LEGO Studios Camera and Software provides professional movie-making functionality yet is easy enough for an eight-year-old to use. Your students will be editing their first movie in about 20 minutes thanks to software tutorials, help, tips, and tricks. It is convenient, too. The camera mounts to LEGO bricks and its 17-foot cable enables students to film almost anywhere in the classroom.

Truly a crossover product, the camera and software can be used to creatively illustrate mastery of science, technology, or math concepts; historic events; or literature. By selecting a topic, creating the sets, and editing the action, students convey their understanding of the subject and learn to organize and present information in a logical fashion.

Kit includes:

- Camera with built-in microphone
- 17-foot cable
- CD-ROM editing software

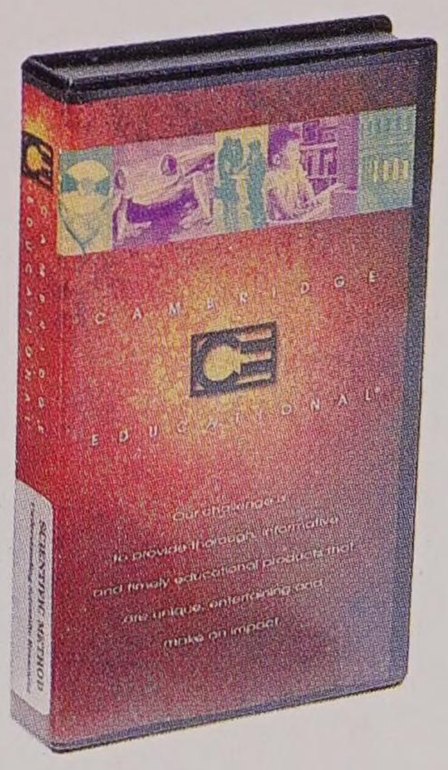
L979647 Windows CD-ROM—$129
Available March 1, 2001

Minimum PC Requirements

- Pentium 233 MMX
- 32 MB of RAM
- DirectX 7 compatible graphics/sound card
- Windows 98 Second Edition, or 2000 Millennium
- USB Port
- CD-ROM drive
- 100 MB hard disk space (200 MB recommended)
- Internet browser (optional)

PC Movie Camera Technical Specifications

- USB connection
- 30 frames per second
- 15-foot cable
- Capture button
- Built-in microphone
- Manual focus from one inch to infinity
- Modes: full motion and digital still

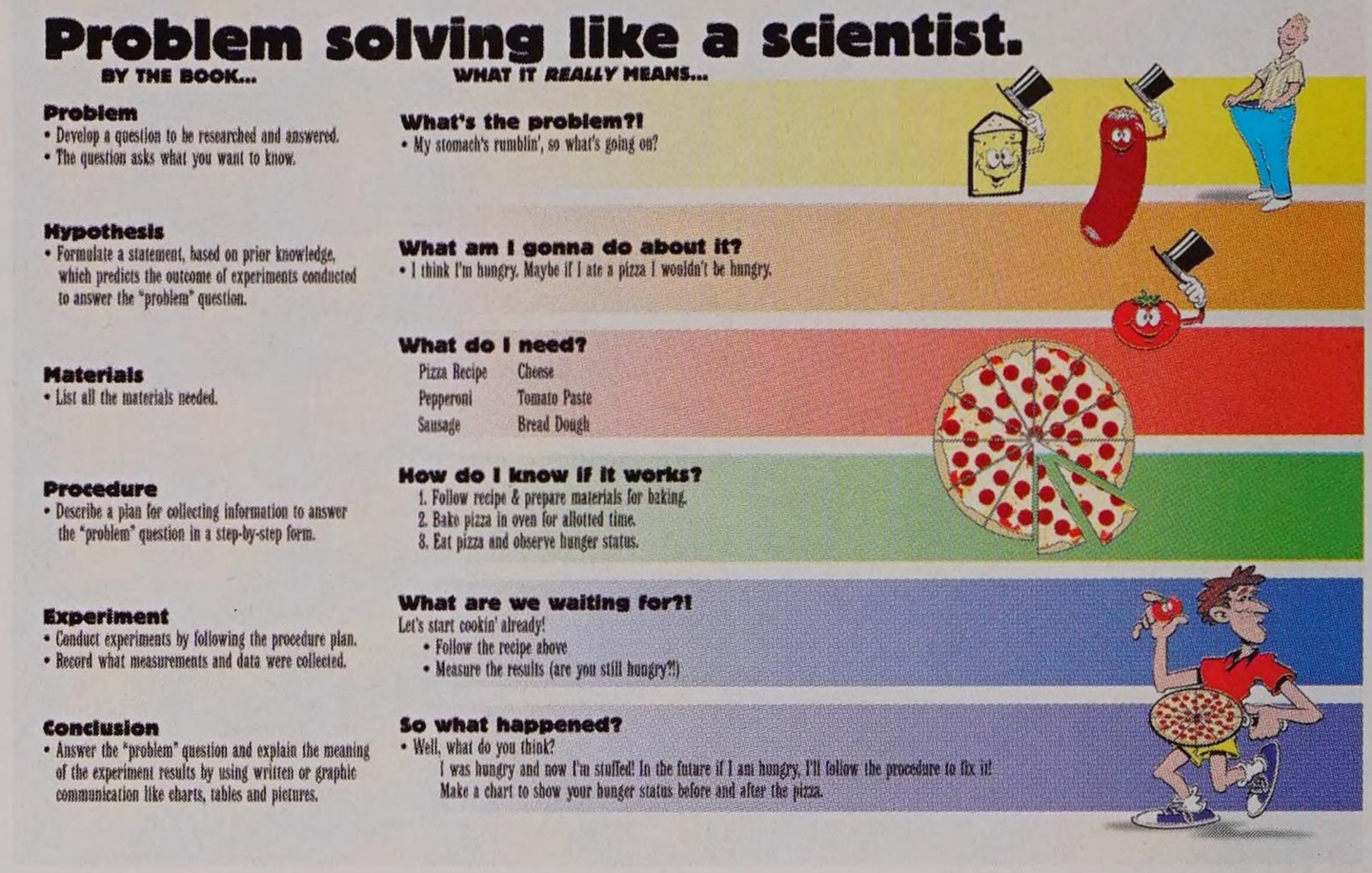


SCIENTIFIC METHOD: UNDERSTANDING SCIENTIFIC REASONING VIDEO

This video from Cambridge Educational® leads students clearly and simply through the steps of the scientific process, using examples from both scientific laboratories and everyday life. It covers the differences between important concepts, such as theory and hypothesis, dependent variable and independent variable, and pure and applied sciences. Time: 20 minutes.

Level: Middle School-High School

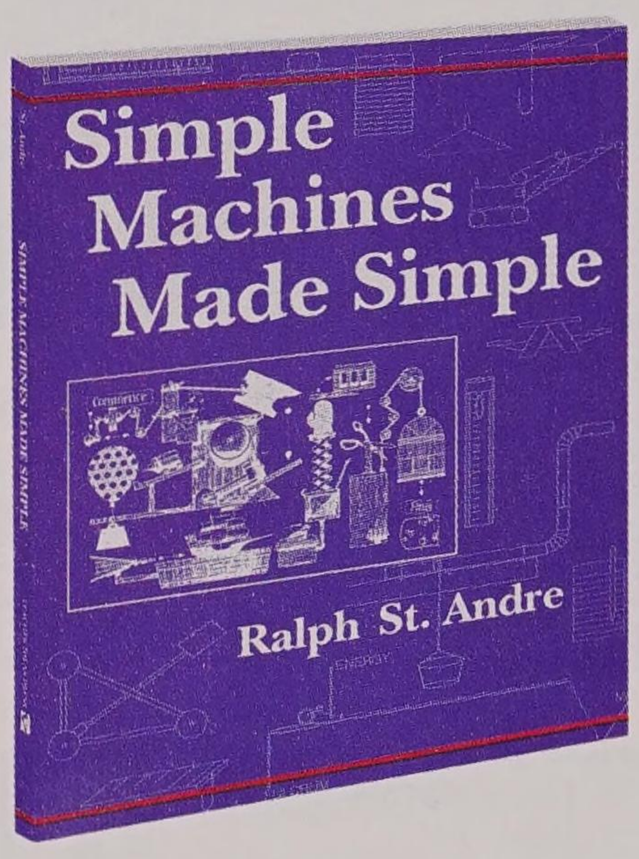
L756853—$89



PITSCO PROBLEM-SOLVING POSTER

Bet you never knew pizza could be part of the scientific problem-solving process. This clever chart clearly and concisely describes each step of the process and relates it to something with which every student is familiar – eating a pizza! Size: 11" x 17".

L756194—$4.95

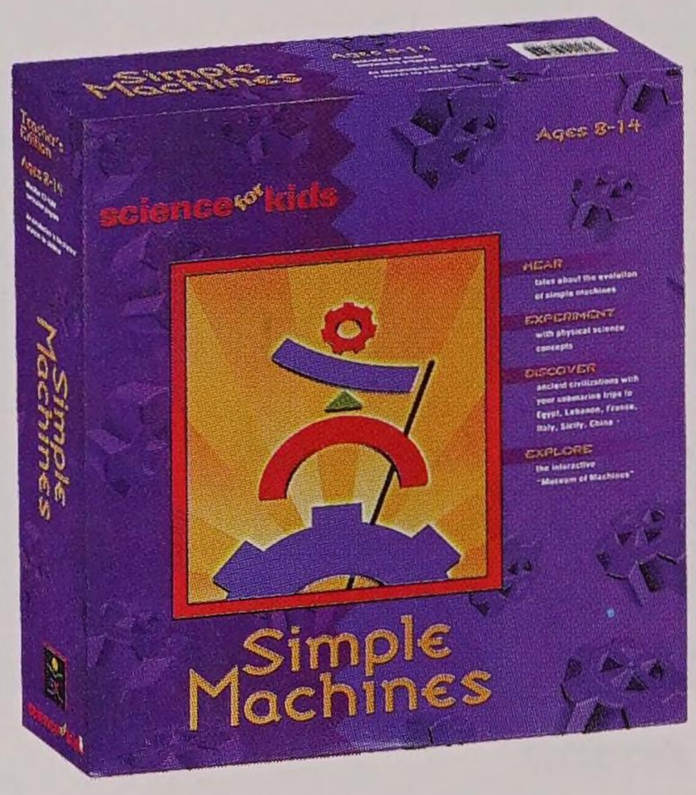


SIMPLE MACHINES MADE SIMPLE

Teach your students essential scientific principles and basic mechanics through hands-on, cooperative learning activities that are not only easy to teach but also inexpensive and fun. As students experiment with gadgets that slide, pivot, turn, rub, and work, they learn why and how machines operate the way they do. Illustrated, step-by-step instructions, materials lists, reproducible activity and assessment sheets, and estimated time required for activities make this a unique and practical resource. Paperback, 150 pages.

Level: Middle School

L756122—$25

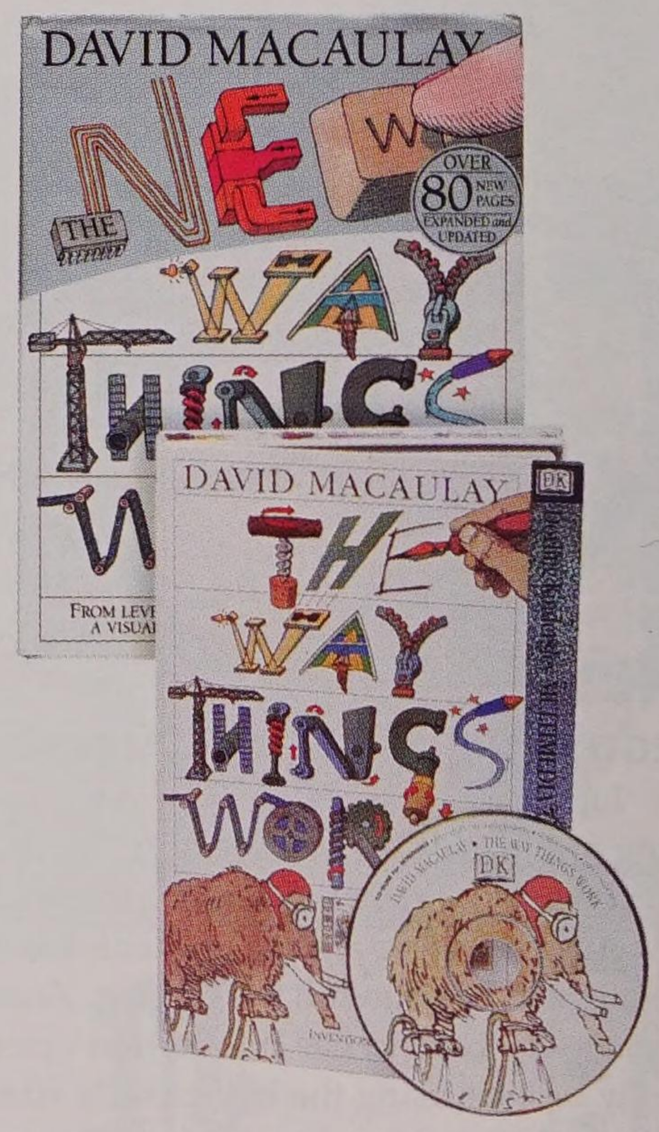


SIMPLE MACHINES TEACHER'S EDITION CD-ROM

Students will explore the ancient application of six simple machines: the inclined plane, wedge, lever, screw, pulley, and wheel. They will learn how different cultures and civilizations adapted and progressed with the use of these simple machines. The program concludes with the students exploring an interactive "Museum of Machines" designed to show ancient tools, animal adaptations, and combinations of simple machines and compound machines. The kit includes a teacher's guide, *Student Science Journal*, CD-ROM (Win/Mac), and Science Lab Kit.

Level: Intermediate

L756099 Mac/Win CD-ROM—$229



THE WAY THINGS WORK CD-ROM

The ever-popular book by David Macaulay comes to life in this interactive CD-ROM! Vivid "zoom-in" illustrations and clear, easy-to-understand text descriptions help students comprehend the workings of machines, inventions, and technology.

The illustrations jump into motion in incredible and humorous animations. Includes more than 1,000 illustrations, 300 animations, and more than 60 minutes of audio.

L754534 Mac/Win CD-ROM—$49

L756435 384-page book—$35

INVENTION STUDIO CD-ROM

Design, build, and test your own real inventions. *Invention Studio* gets students' creative juices flowing with the Brainstormer. It walks them through the steps of invention. Students can also learn about inventors and their inventions. Then, in the garage they get to design, build, and test cars, planes, and trucks.

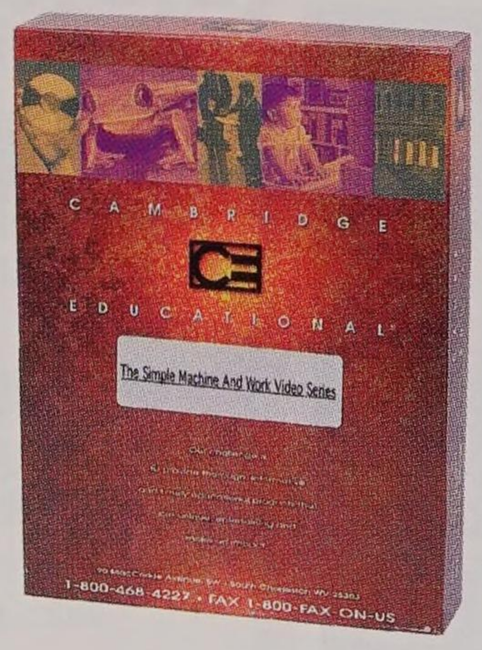
L754675 Windows—$44

CRAZY ACTION CONTRAPTIONS

A LEGO inventions book! With this zany project book and 60-piece set, kids are certain to have a blast inventing, tinkering, and watching in amazement as their contraptions jump into action.

Using the LEGO Technic elements, they'll assemble five wacky and fun devices that really work – the Never-Look-Back-Machine, Coat Hanger Daredevil, Skittle Tops, 9-Foot Rubber Band Racer, and Balloon-Powered Rocket Car. With a few additional LEGO elements, they can assemble five more contraptions. The kid-friendly book has 64 full-color pages. Ages 7 and up.

L756183—$19.95



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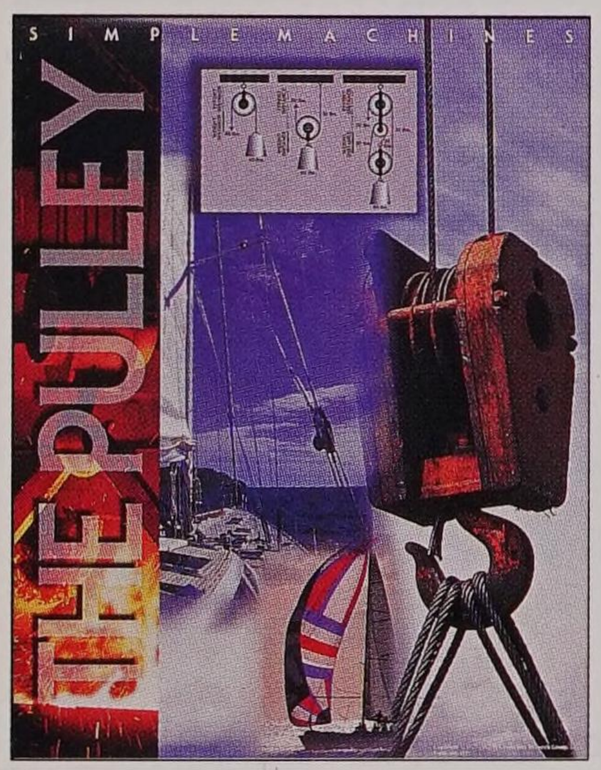
LEGO Designer . . 34-35
Mousetrap Vehicles. 42-43

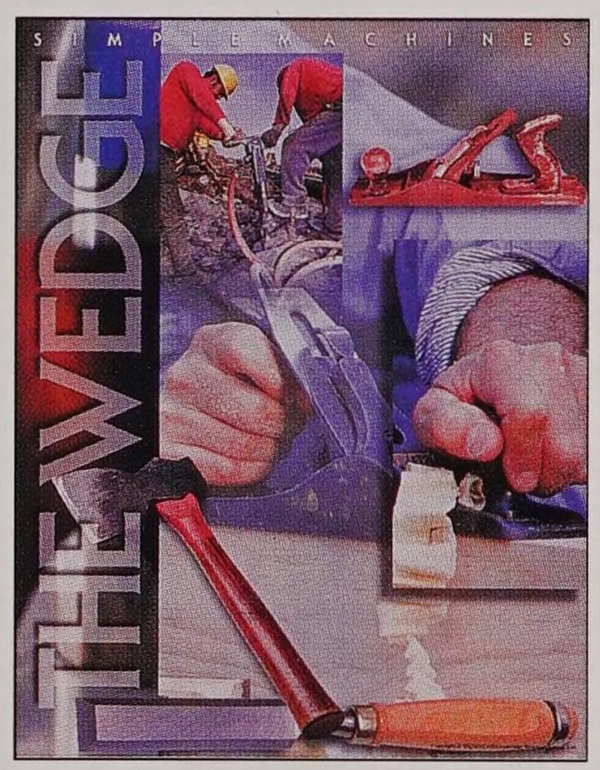
THE SIMPLE MACHINE AND WORK VIDEO SERIES

This set of three videos covers the six simple machines and the concepts of energy and work. Simple explanations and clear diagrams are made memorable by the antics of a cartoon Neanderthal who demonstrates the use of each type of machine. The set includes two teacher's guides that give explanations and review questions with answers. Time: 15 minutes each.

Level: Intermediate-High School

L990213—$179

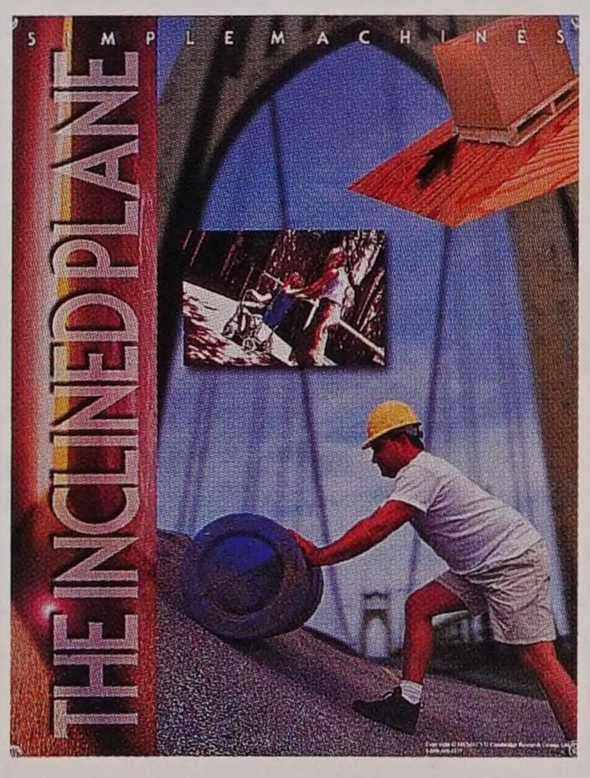




SIMPLE MACHINES POSTERS

This series of six posters is an excellent addition to any technology classroom. Includes The Wedge, The Lever, The Pulley, The Screw, The Wheel, and The Inclined Plane. Size: 17" x 22".

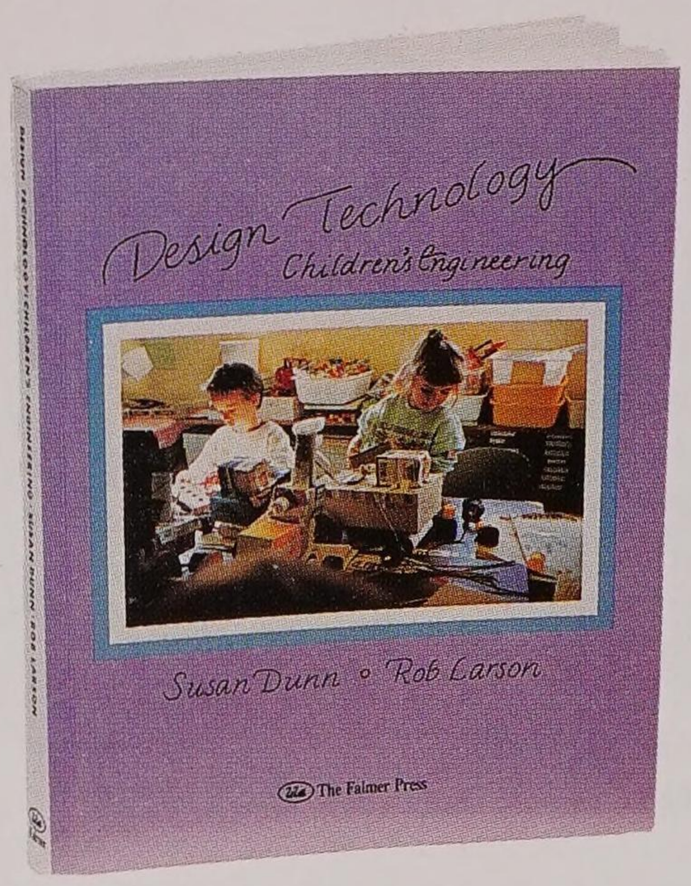
THE PULLEY
L756052
THE LEVER
L756055
THE WEDGE
L756054



THE WHEEL
L756050
THE INCLINED PLANE
L756051
THE SCREW
L756053
$5.95 each

SET OF SIX SIMPLE MACHINES POSTERS
L757711—$32

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

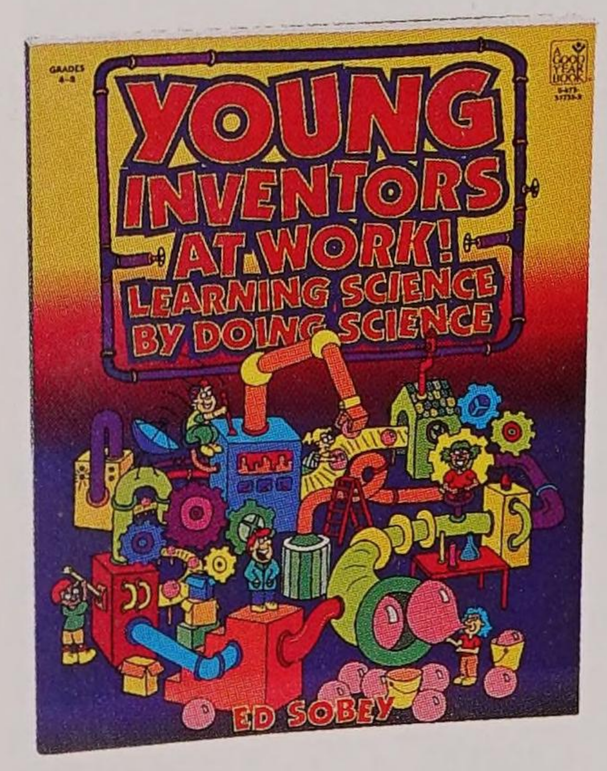


DESIGN TECHNOLOGY: CHILDREN'S ENGINEERING

This excellent book is meant for teachers who want to learn how to orchestrate the use of design technology in the elementary classroom. Filled with illustrated examples of activities, children's responses, and practical ideas for implementation, it is a treasure trove for the inquiry-based teacher.
Paperback, 176 pages.
Level: Adult
L990224—$29.95

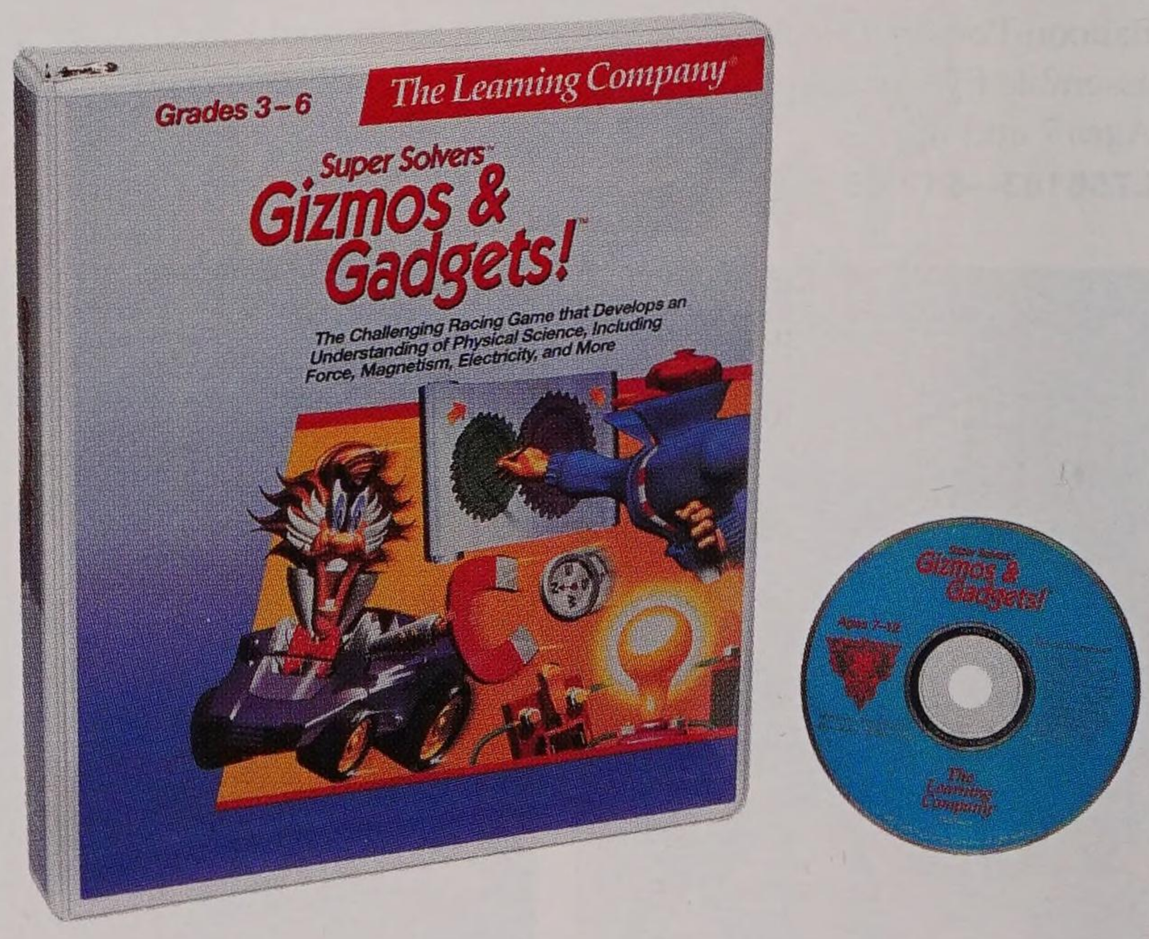
PITSCO CHALLENGEPAK

The challenge is: for what *can't* you use this *ChallengePak*? It has mousetraps, wheels, axles, dowel rods, wood strips, rubber bands, balloons, wheels, and much more! Use for a variety of problem-solving challenges. The possibilities are endless. (Egg carton not included.) For a class of 25 students.
L751385—$99



YOUNG INVENTORS AT WORK: LEARNING SCIENCE BY DOING SCIENCE

A two-part book to challenge young inventors. Section I gives instructions for simple activities that stimulate creativity and problem solving. Activities are based on the idea of teachers and assistants as facilitators who encourage students to try their own ideas and develop their own solutions. The authors advocate valuing "creative failures" as much as successes. Section II consists of short stories about famous (and a few not-so-famous) inventors, which will both intrigue students and help them realize that all inventors started as kids with a great curiosity about the world.
Paperback, 120 pages.
Level: Intermediate-Middle School
L756881—$13.95



GIZMOS & GADGETS! CD-ROM

This challenging racing game helps students develop an understanding of technology. Students try to build the best auto, air, and alternative energy race vehicles. To get the parts for their vehicles, they have to solve puzzles that deal with gears, force, magnetism, electricity, balance, energy sources, and simple machines. Designed with input from educators, *Gizmos & Gadgets* teaches kids practical application of science and technology with its hands-on approach.
Level: Early Learning-Middle School
L754690 Mac/Win CD-ROM—$89
L754691 Mac 3.5"—$89

Mechanical Engineering 24-25
Motorized Simple Machines 26-27
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Levers/Pulleys. . . . 30-31
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LEGO Designer . . 34-35
Mousetrap Vehicles. 42-43

GEARS BY PITSCO
INNOVATIVE EDUCATION

Colors may vary on all gears.

PINION GEAR
L720768 (pkg of 10)—$8
(10 pkgs of 10)—$67.50
(100 pkgs of 10)—$500

COMBO GEAR PKG C
(1-5/16" x 3/4")
L720771 (pkg of 10)—$6
(10 pkgs of 10)—$50
(100 pkgs of 10)—$375

COMBO GEAR PKG A
(1-5/8" x 1-1/8")
L720779 (pkg of 10)—$6
(10 pkgs of 10)—$50
(100 pkgs of 10)—$375

COMBO GEAR PKG D
(5/8" x 3/8")
L720772 (pkg of 10)—$6
(10 pkgs of 10)—$50
(100 pkgs of 10)—$375

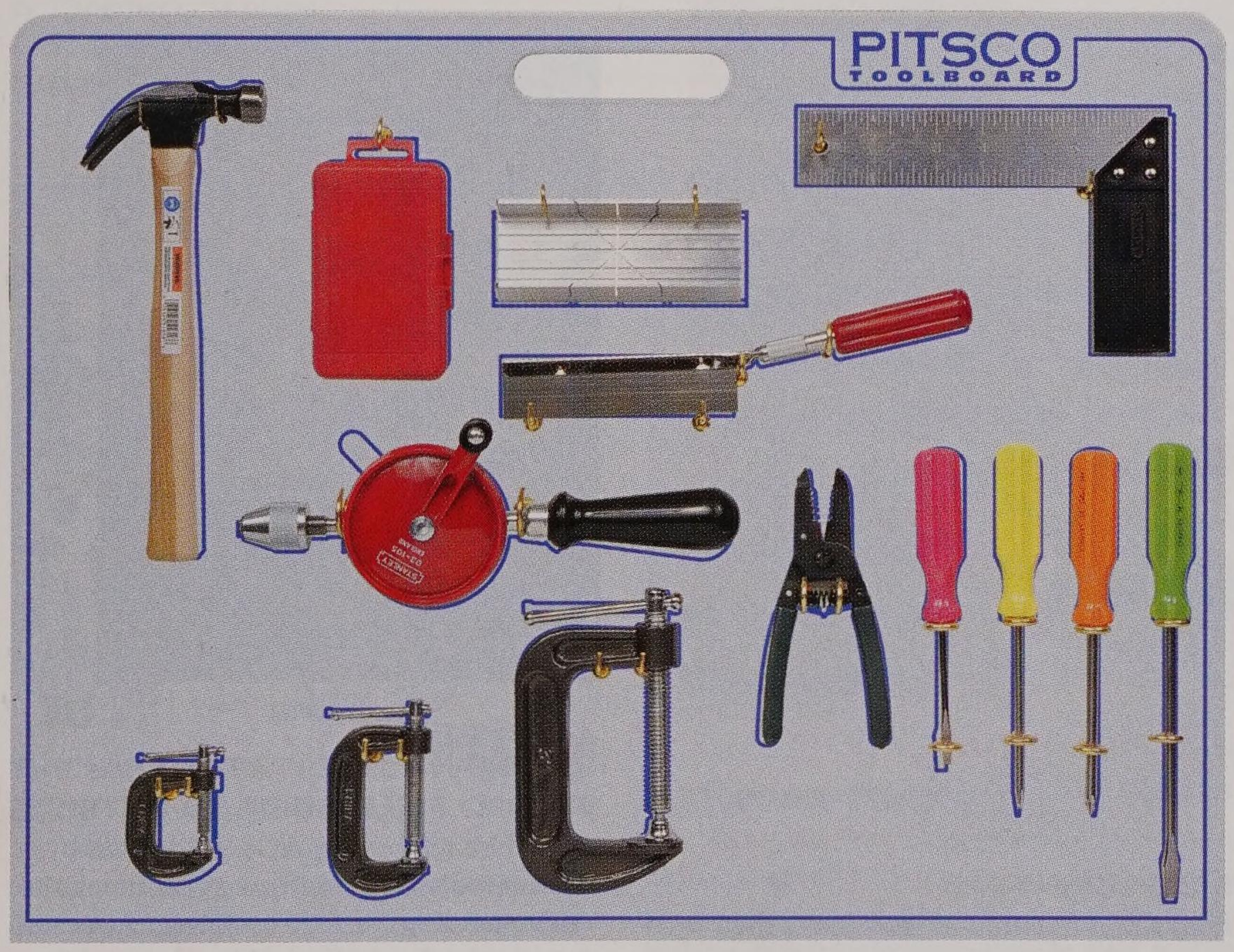
COMBO GEAR PKG B
(1-5/16" x 15/16")
L720770 (pkg of 10)—$6
(10 pkgs of 10)—$50
(100 pkgs of 10)—$375

BEVEL-WORM-RACK GEARS
(10 EACH OF 5 PIECES)
L720773 (pkg of 50)—$3
(10 pkgs of 50)—$25
(100 pkgs of 50)—$185

PITSCO PLASTIC GEARS

Gain the advantage with Pitsco's *Plastic Gears*. Mechanical advantage, that is. Use for vehicles, machines, windmills, or any other application you can imagine. Gear hole is 1/8" (3 mm) and will fit on 1/8" axles. The smallest gear has a 1/16" hole that fits the shaft of our mini motors. Contains five spur gears, two bevel gears, a worm gear, and two rack gears.

L714841—$5
10 for $45
100 for $405



PITSCO TOOL SET

Everyone knows it's important to have the right tool for the job. Right, Al? Well, it's hard to find a job that this tool set doesn't cover. It includes a seven-ounce claw hammer, hand drill and drill bits, screwdrivers (regular and Phillips), three C-clamps, saw and miter box, try square, and a pair of wire strippers/cutters. Includes a self-standing storage board with a carry handle.

L755051—$195

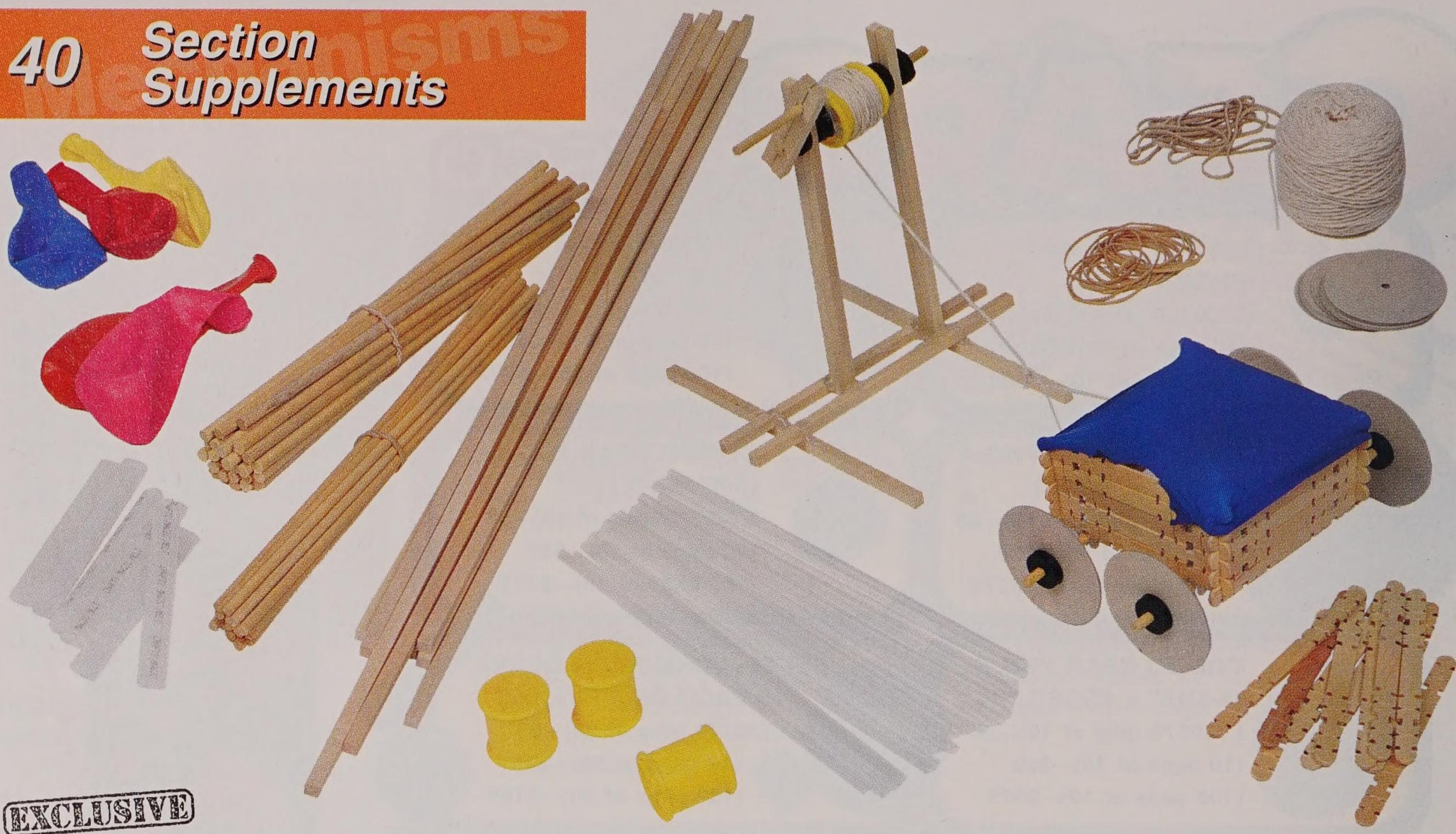
HOW TO BE AN INVENTOR

Allow your students to put on an inventor's thinking cap to create gadgets, games, tools, toys, and other amazing innovations. In addition to being exposed to what every inventor should know, there are stories about unsung women inventors, successful inventing teams, and dozens of creations including the bicycle, earmuffs, motion pictures, the Frisbee™, Superman, radio, the Slinky®, miniature golf, and much more. Paperback, 80 pages.

Level: Intermediate

L756077—$10.95

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

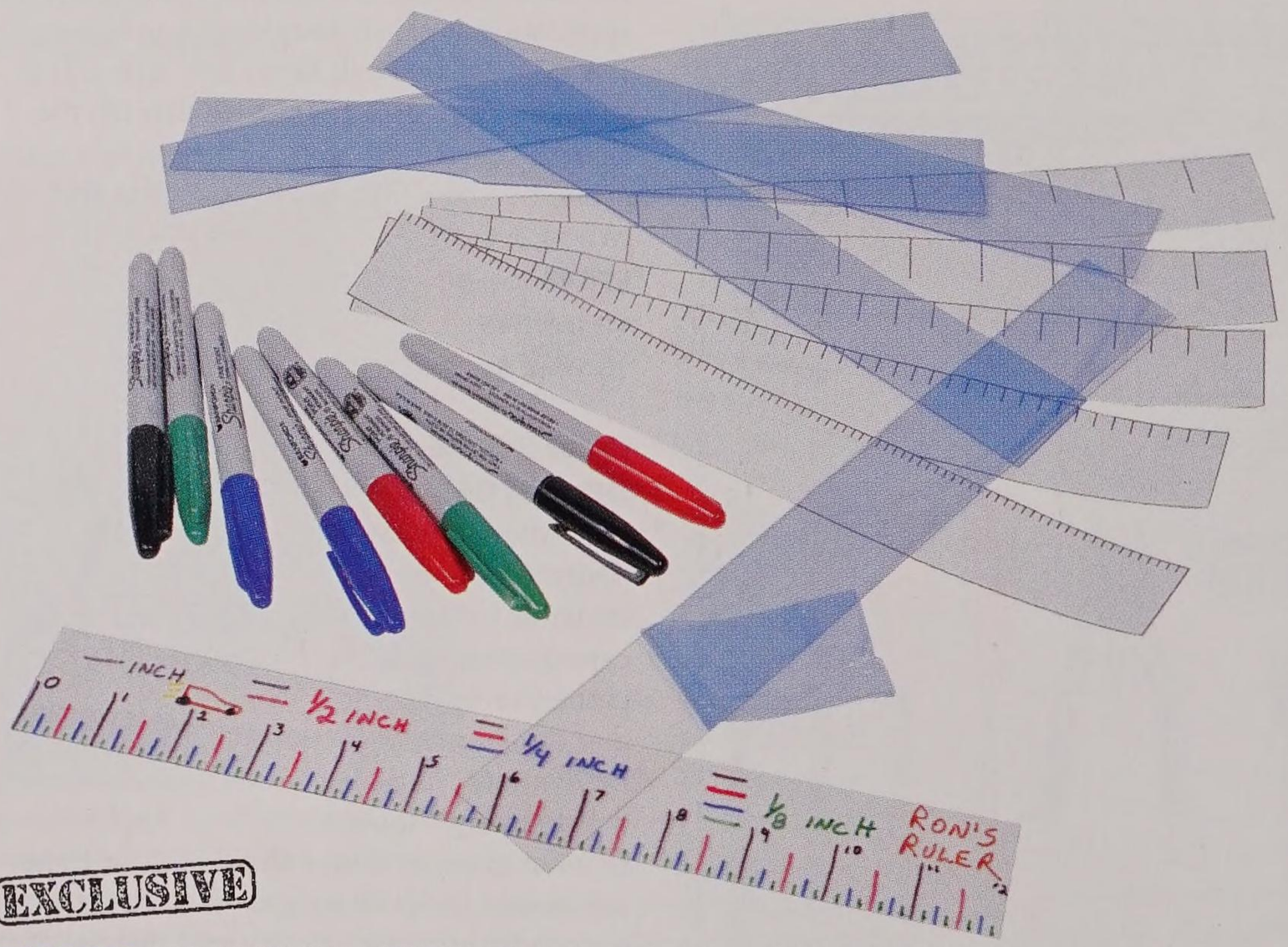


EXCLUSIVE

PITSCO INVENTION EXPLORE-A-PAK

If your students can dream it, they can invent it with the *Invention Explore-A-Pak*! We've included a wide variety of materials – rubber bands, straws, basswood, dowel rods, skill sticks, balloons, wheels, glue, plastic spools, and more. Students must supply the imagination. For a class of 25.

L990010—$80

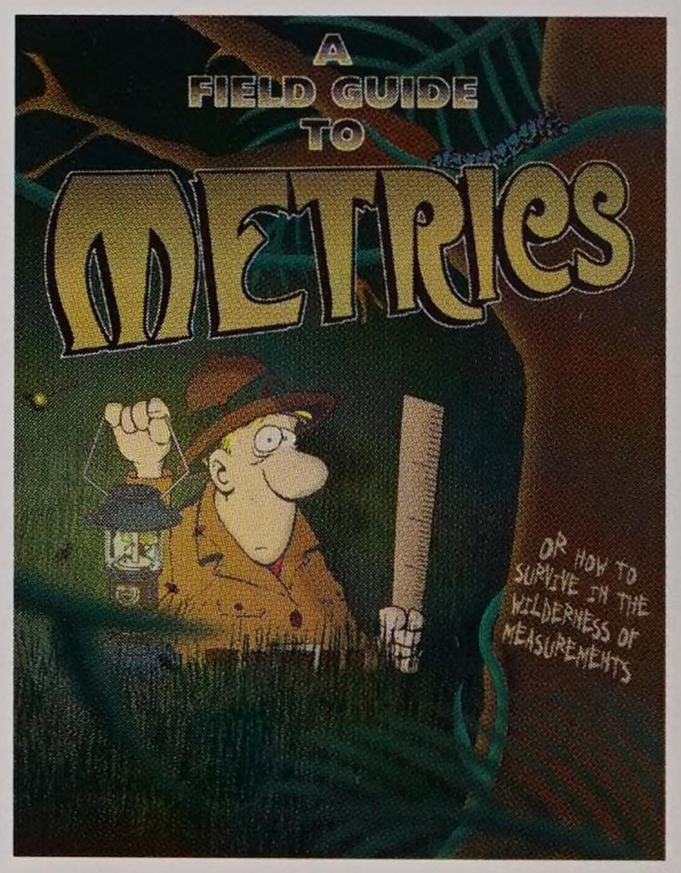


EXCLUSIVE

PITSCO MEASURING WITH FRACTIONS EXPLORE-A-PAK

Students learn how to measure, and they learn about fractions as they make their own rulers! It's an activity that measures long on educational value and tall on fun. The pack provides everything necessary – permanent markers, plastic material, templates, and student worksheets for a class of 25.

L990008—$59



EXCLUSIVE

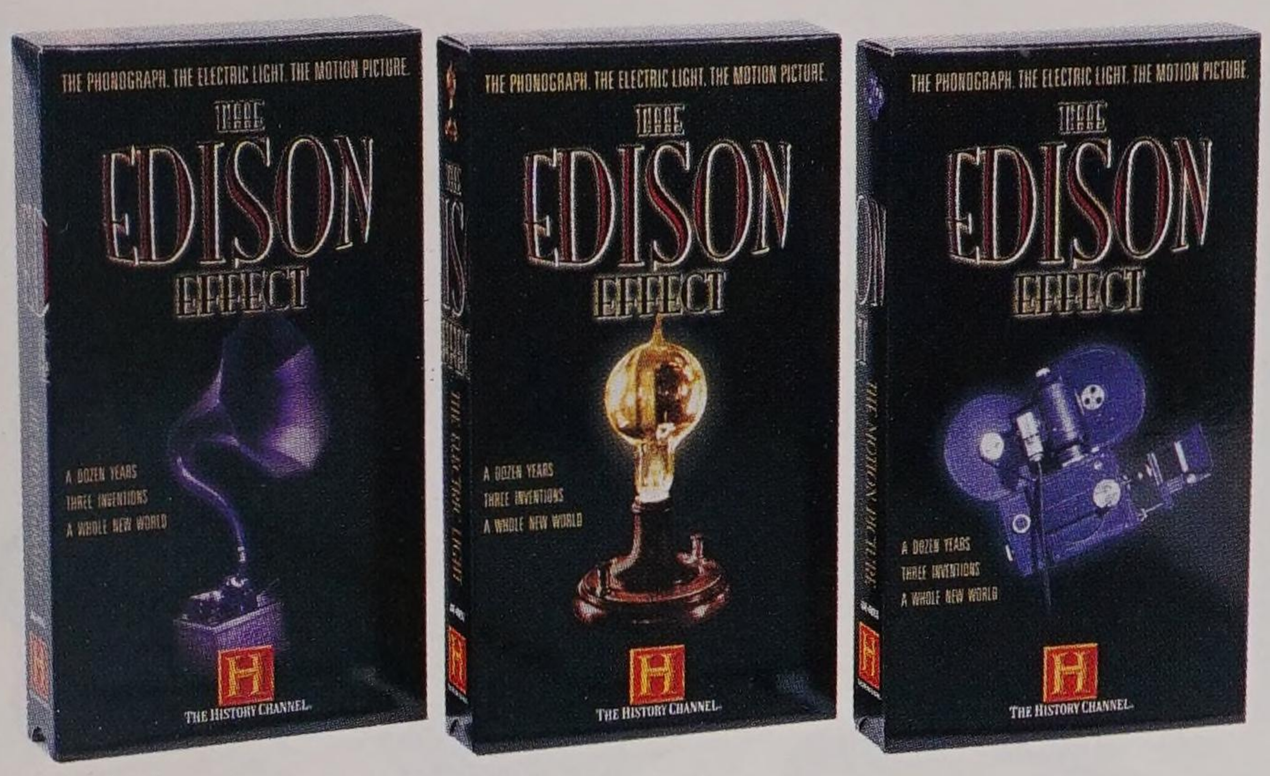
PITSCO FIELD GUIDE TO METRICS

This step-by-step field guide literally walks students through every centimeter of understanding the metric system. Suzanne Arruda, teacher of this subject, has written and tested this book. Her fun style of writing and clever illustrations make this guide unique. Students will enjoy this book and will know all about metrics when they finish. Paperback, 54 pages.

Level: Intermediate-Middle School

L990009—$5.95

FreeFax™ Orders!
888-534-6784



THE EDISON EFFECT VIDEO SERIES

The phonograph. The electric light. The motion picture. Life in the modern world would be unthinkable without the inventions of Thomas Alva Edison. How did a man with only three months of formal schooling change the way we live? *The Edison Effect* shows the complete story of the feuds, the ingenuity, the mistakes, and the successes behind Edison's most famous inventions. Time: 50 minutes each.

Level: Middle School-Adult

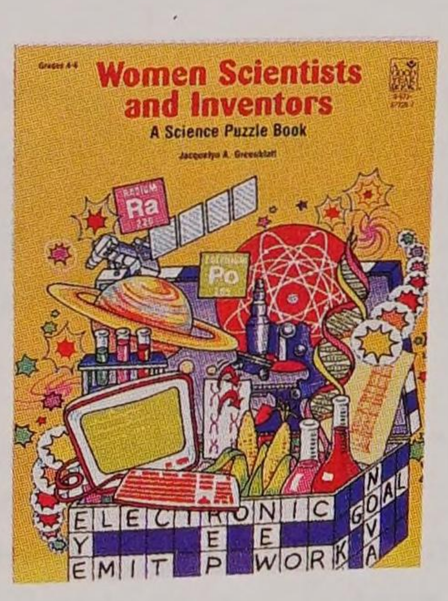
L754909 Complete 3-video series—$49.95

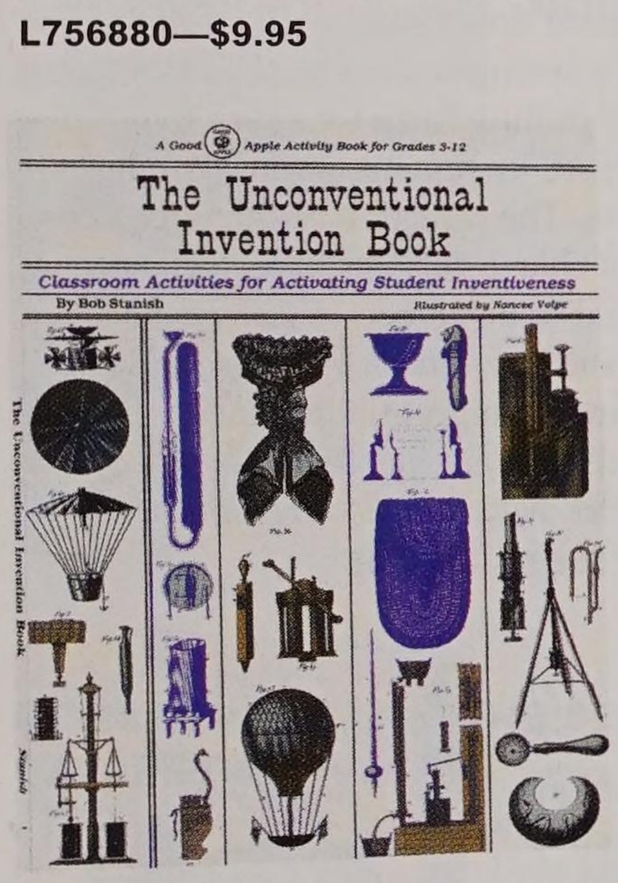
WOMEN SCIENTISTS AND INVENTORS

A brief introduction to the life and work of each of 42 women scientists and inventors is followed by a puzzle that, when solved, reveals the name of the woman responsible for the accomplishment. A fun way to learn about many little-known, but important, contributors to our society. Paperback, 94 pages.

Level: Intermediate-Middle School

L756880—$9.95



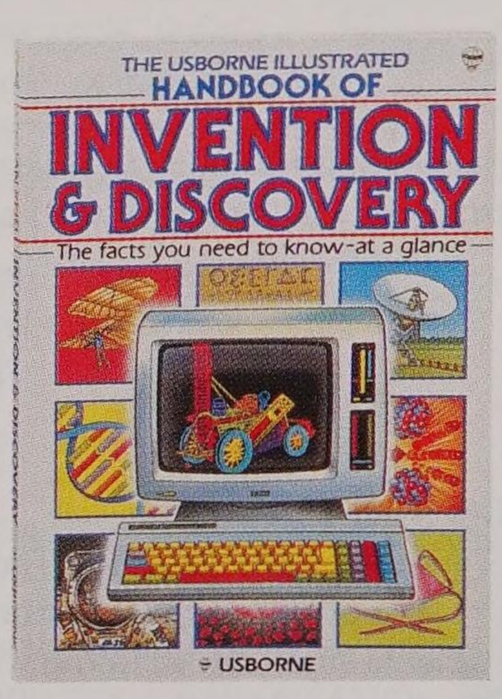


THE UNCONVENTIONAL INVENTION BOOK

This book provides thorough and easy-to-follow teacher's guides and offers hundreds of suggestions about how to accommodate inventive and creative thinking with classroom projects. This unique collection includes reproducible worksheets, coach reversing, designing, redesigning, finding new uses, improving, and inventing. Paperback, 121 pages.

Level: Intermediate-High School

L751239—$12.95



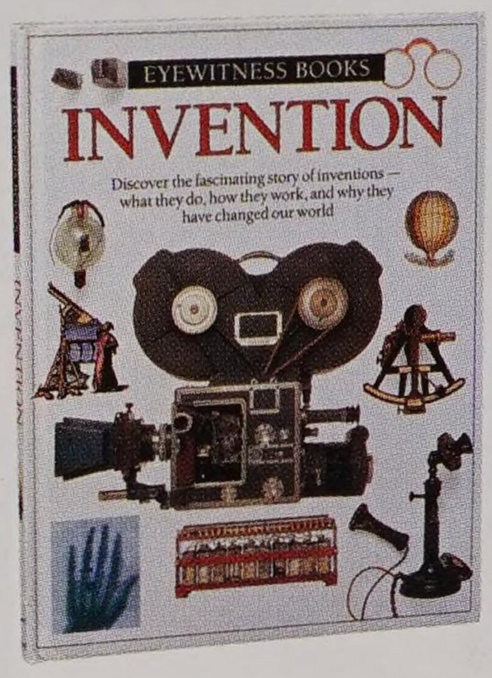
INVENTING STUFF

Get your idea factory rolling with *Inventing Stuff*! This engaging book gives you effective techniques, such as backward inventing and finding new uses for things. It also shows you how to find and solve problems and supplies thought-provoking facts about inventors and inventions.

Paperback, 79 pages.

Level: Middle School-High School

L754445—$11.95



EYEWITNESS: INVENTION

This book will captivate and motivate students with creative minds! Lionel Bender presents excellent illustrations to challenge the scientists of the future. This volume of photographs and text explores such inventions as the wheel, gears, levers, clocks, telephones, and rocket engines. Hardback, 64 pages.

Level: Intermediate-Middle School

L752164—$19

Mechanical Engineering 24-25
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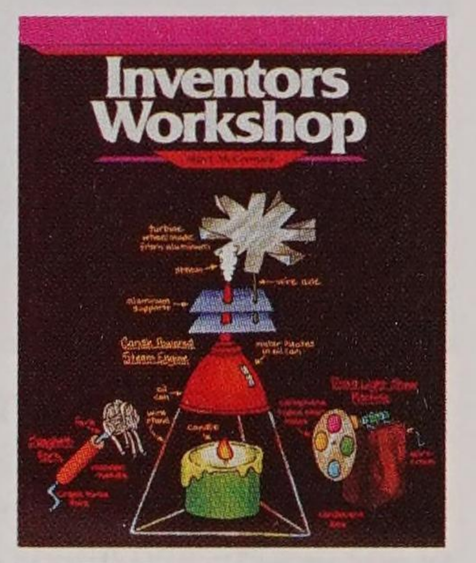


INVENTORS WORKSHOP

Reproducible illustrated directions for more than 25 intriguing projects. "Sidetrips," following each project, challenge students to apply their inventiveness. Paperback, 84 pages.

Level: Intermediate-Middle School

L751238—$12.95

USBORNE: INVENTION & DISCOVERY

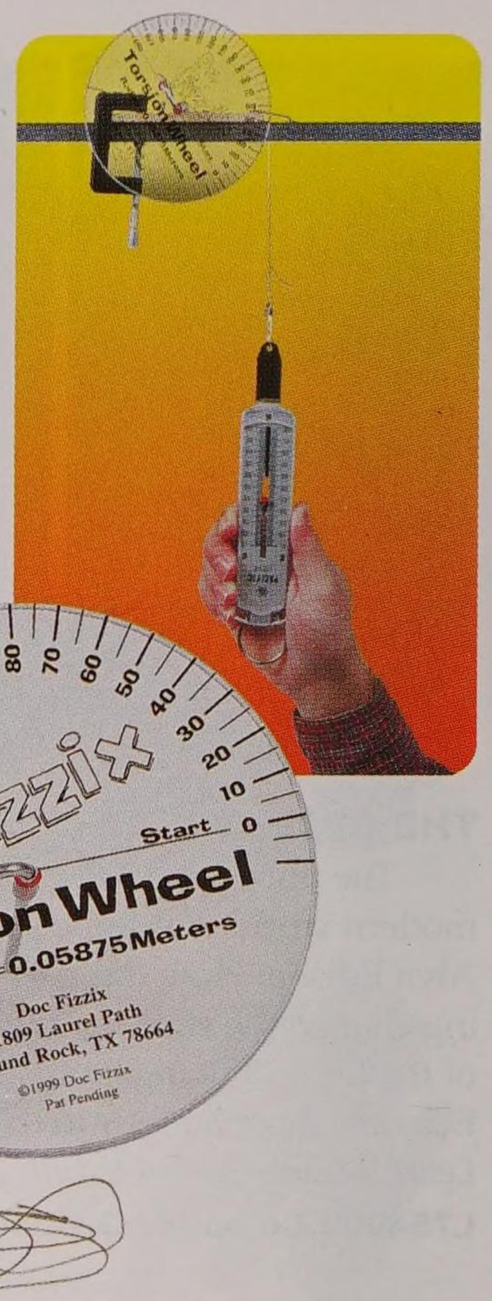
An excellent classroom reference book that presents (at a glance) the facts you need to know. With hundreds of colorful illustrations and concise informative text, *Invention & Discovery* chronicles the history and development of the most important innovations and discoveries of our time. Paperback, 128 pages.

Level: Middle School-High School

L751493—$12.95

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

42 Mousetrap Vehicles



MOUSETRAP CAR KIT

More than a kit, this is a complete start-to-finish design activity for an individual student! The student will follow the design process and see direct applications of science and technology as he or she designs and builds a mousetrap-powered vehicle and competes with classmates to design the fastest car or the car that goes the farthest. Each kit includes balsa wood, four CDs (for wheels), CD spacers, thrust washers, brass tubing, string, building instructions, and a resource book.
Level: Middle School-High School

L757033—$14.95

L718792 13" Lever Arm—$1.75
10 for $16
L755041 Bevel Washers (pkg of 20)—$8
10 pkgs for $72
L755036 CD Wheel (pkg of 10)—$12.50
10 pkgs for $112.50

L718794 19" Lever Arm—$1.95
10 for $18
L755037 2-1/2" Wheels (pkg of 100)—$39
10 pkgs for $351

MOUSETRAP CAR PACKS

Save with these complete packs that contain enough materials to build 10 or 30 mousetrap vehicles. Each pack includes one copy of the basic building instructions and a copy of the helpful handbook, *Mousetrap Cars: The Secrets to Success.*
Level: Middle School-High School

L757034 Mini Pack (enough for 10 students)—$125
L757035 Class Pack (enough for 30 students)—$350

TORSION WHEEL

Now! For use with your mousetrap cars – a simple way to test your mousetrap's starting energy and spring constant! The *Torsion Wheel* energy tester has been designed for accuracy and simplicity. A string attached at the bottom of a disk and fitted into a groove along the top is pulled downward with a force probe or a spring scale. The student records the pulling force for every five-degree increment marked on the disk. The direction of the force does not change, so the scale does not need to be zeroed at different positions. The *Torsion Wheel* is made of durable, high-quality plastic. Lab activities are included.
Level: Middle School-High School

L756632—$21.95

MOUSETRAPS (VICTOR BRAND)

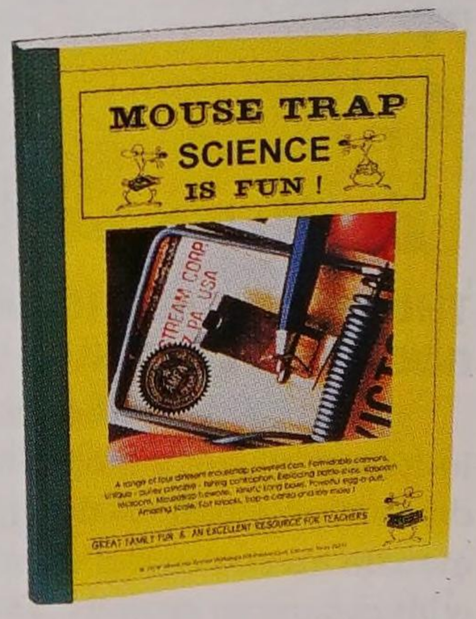
Use these traps for mousetrap-powered vehicles.

L750168 (pkg of 10)—$6.95
10 packages for $63

MOUSE TRAP SCIENCE IS FUN!

This fun book of resources and ideas for teachers and students on the hows and whys of mousetrap construction is a culmination of the author's experiments since age 10 in the world of mousetrap pranks/inventions. Black-and-white diagrams and photographs clearly illustrate the design and construction of mousetrap inventions as varied as cars, cannons, long bows, explosive devices, a fishing contraption, and an "egg-a-pult." The text is written simply enough for students and emphasizes safety, how to be a scientist, and the principles of physics. Paperback, 222 pages.
Level: Intermediate-Adult

L756863—$29.95



TUBING CUTTER

This handy tool cuts small-diameter metal tubing. Great for cutting brass axle tubes and bushings.

L754575—$5.95 each
10 for $53.50

Order Online!
www.pldstore.com

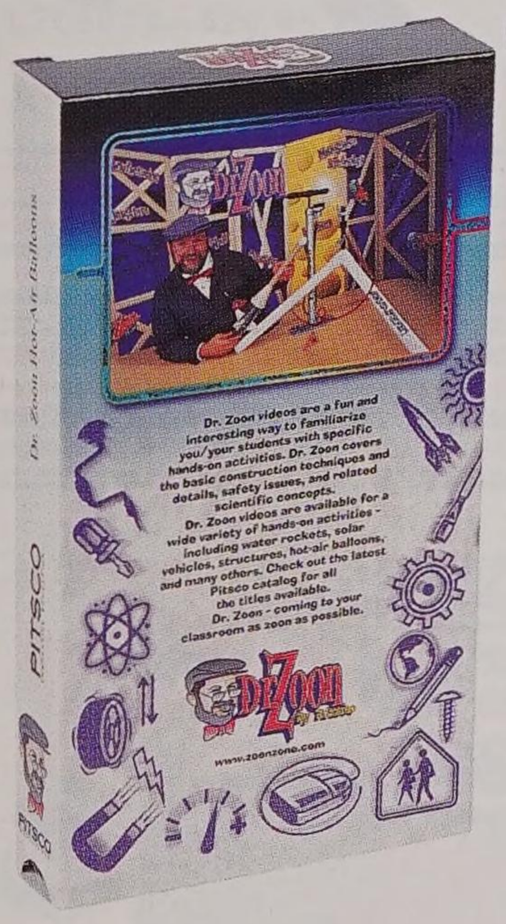
Mousetrap Vehicles 43

Mechanical Engineering 24-25
Motorized Simple Machines 26-27
Wheels & Axles/ Gears 28-29
Levers/Pulleys. . . . 30-31
Early Simple Machines 32-33
LEGO Designer . . 34-35
•*Mousetrap Vehicles. 42-43*

PITSCO MOUSETRAP VEHICLE TEACHER DEMO KIT

This kit is designed for the teacher to experiment with different variables after making a basic mousetrap vehicle. The kit includes the same types of basic materials as found in the *Mousetrap Car Kit*, plus other materials to allow exploration of different options for developing mechanical advantage. The demo kit includes CD-ROM discs, plastic wheels (two sizes), mousetraps, different length lever arms, spider wire, string, brass tubing, washers, steel axles, delrin axles, glue, balsa wood, rubber bands, and a copy of *Mouse Trap Cars: The Secrets to Success, Teacher's Edition.*

L754973—$65



New

PITSCO DR. ZOON MOUSETRAP VEHICLE VIDEO

Building mousetrap vehicles can be a snap. Ouch! Time to go to the doctor – Dr. Zoon, that is!

All seriousness aside, there's a lot of energy in a mousetrap, and Dr. Zoon can show you how to harness it and propel a mousetrap vehicle.

This is problem solving at its best, with step-by-step help from Dr. Zoon! Time: 20 minutes.

Level: Middle School-High School

L757232—$24.95

MOUSETRAP T-SHIRTS

Mousetrap-vehicle engineers, or "mousegineers," can proudly wear this colorful shirt that shows everyone what drives them. T-shirts are made from 100% cotton and are available in medium, large, and extra-large sizes. Say cheese!

L754981 Medium—$14.95
L754982 Large—$14.95
L754983 X-Large—$14.95

MOUSE TRAP CARS: THE SECRETS TO SUCCESS, STUDENT EDITION

If students are doing a mousetrap-vehicle activity, they need this book. It is packed with excellent ideas for building mousetrap cars from start to finish, including making lightweight frames, reducing friction, making wheels, building a speed car, and building a distance car.

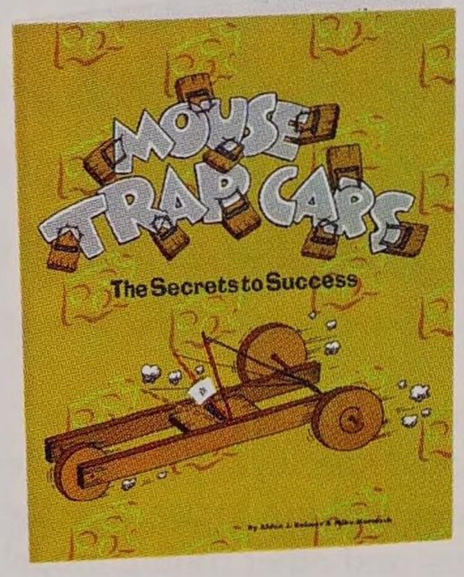
It further enlightens aspiring designers by exploring the physics elements that apply to mousetrap cars – friction, rotational inertia, Newton's Laws of Motion, energy, mass, torque, and more. The book follows a lighthearted comic book format with oodles of helpful illustrations. Paperback, 103 pages.

Level: Middle School-High School

L754550 Student Edition—$14

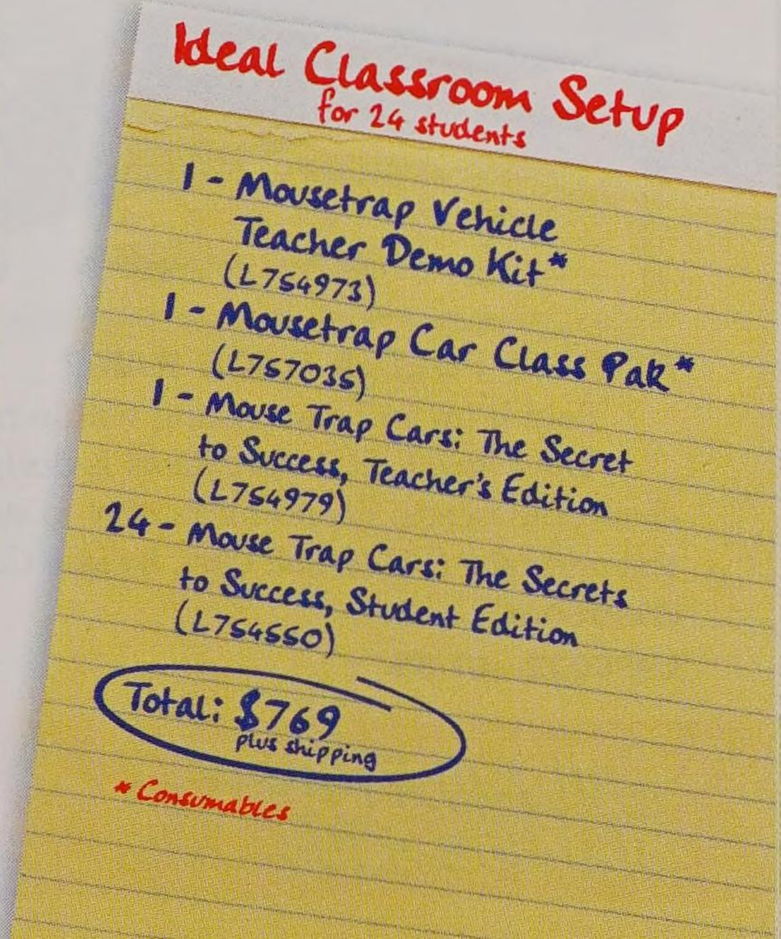
The teacher's edition of this book gives you in-depth information on the mousetrap-vehicle activity. Lots of formulas and classroom tips! Paperback, 133 pages.

L754979 Teacher's Edition—$18



STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html



PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

EXCLUSIVE

PITSCO BALLOON CAR EXPLORE-A-PAK

Your students will feel inflated after they participate in this fun and challenging balloon car activity. Students build their own balloon-powered vehicles, ranging from the simple (card-stock templates are provided for the vehicle bodies) to the outrageous (students can dream up their own wild designs)!

If desired, the cars can be raced against one another in a classroom showdown. The *Balloon Car Explore-A-Pak* includes a teacher's guide, balloons, axles, wheels, templates, and other needed materials for a class of 50 students.

L990011—$69

L990055 Tank Template (pkg of 100)—$38.50

L990053 Chevy Template (pkg of 100)—$38.50

L990054 Dodge Template (pkg of 100)—$38.50

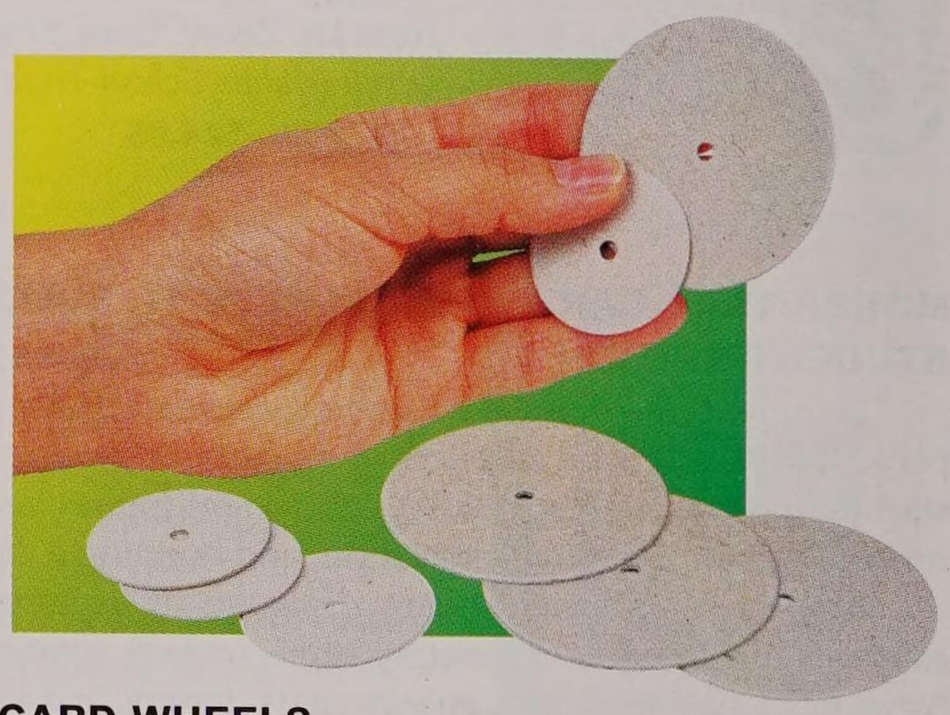
L990052 Ford Template (pkg of 100)—$38.50

PITSCO FOLD & RACE RAMP

Fold it up and start racing within minutes!

The *Pitsco Fold & Race Ramp* is designed specifically for the elementary classroom needs. Economical, easy to store, and fun to use. Use the ramp to test and race *Fold-N-Roll Cars*, *Balloon Cars*, and other rolling models in your classroom.

L990022—$7.95

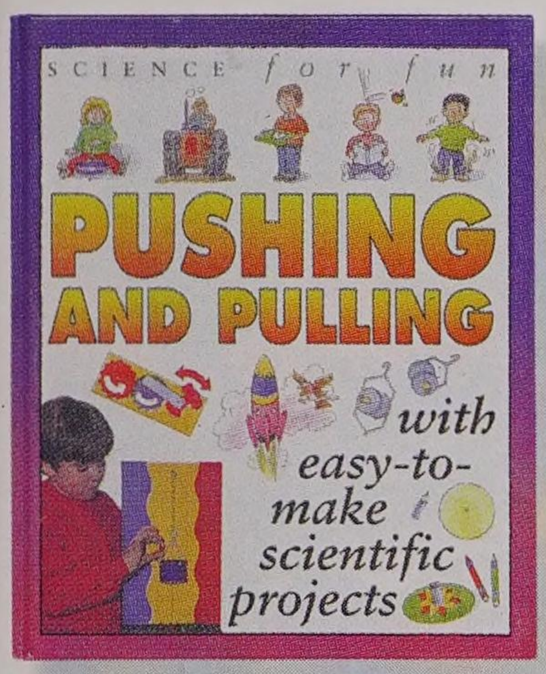


CARD WHEELS

These wheels are great for various vehicles, including mousetrap cars and paper cars. Made of sturdy card-stock material, they feature low rolling resistance. Pack includes 1,008 wheels, 504 each of 1-1/2" and 2-1/2" diameters with inner diameter of 3/16".

L755035—$25

Call Toll Free!
800-362-4308



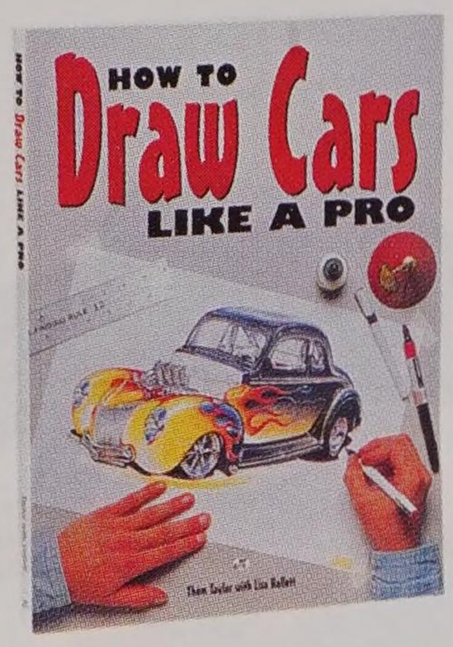
PUSHING AND PULLING

Have you stopped to think that there are forces that push and pull us whenever we do anything? With a series of exciting hands-on projects, this book explains some of these fascinating forces and shows how they work. The reader is guided in analyzing the results of each experiment and is then offered ideas for further activities that will reinforce his or her understanding of the principle. Hardback, 32 pages.

Level: Early Learning-Intermediate

L756074—$20.95

A



New

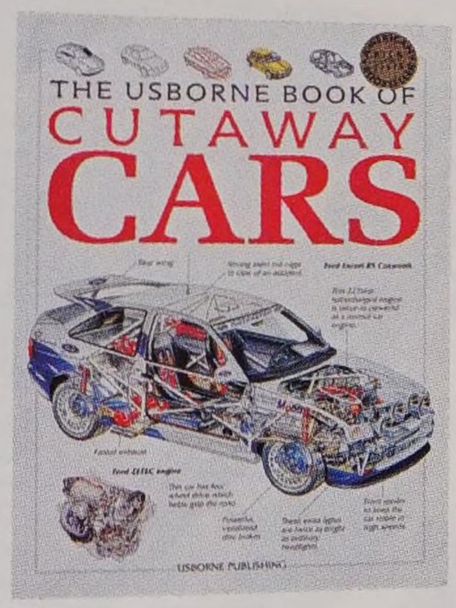
HOW TO DRAW CARS LIKE A PRO

If you ever wanted to design cars – whether as a blueprint for building your own cruiser or simply for the pleasure of creating art – *How to Draw Cars Like a Pro* is for you. Author Thom Taylor draws upon his vast experience to show you how to take your ideas from imagination to the drawing board.

All aspects of drawing are covered including: tools and equipment, perspective and proportion, sketching and cartooning, cut-a-ways and interiors, light and color, and computer art and design. Paperback, 128 pages.

Level: Middle School-Adult

L754905—$19.95



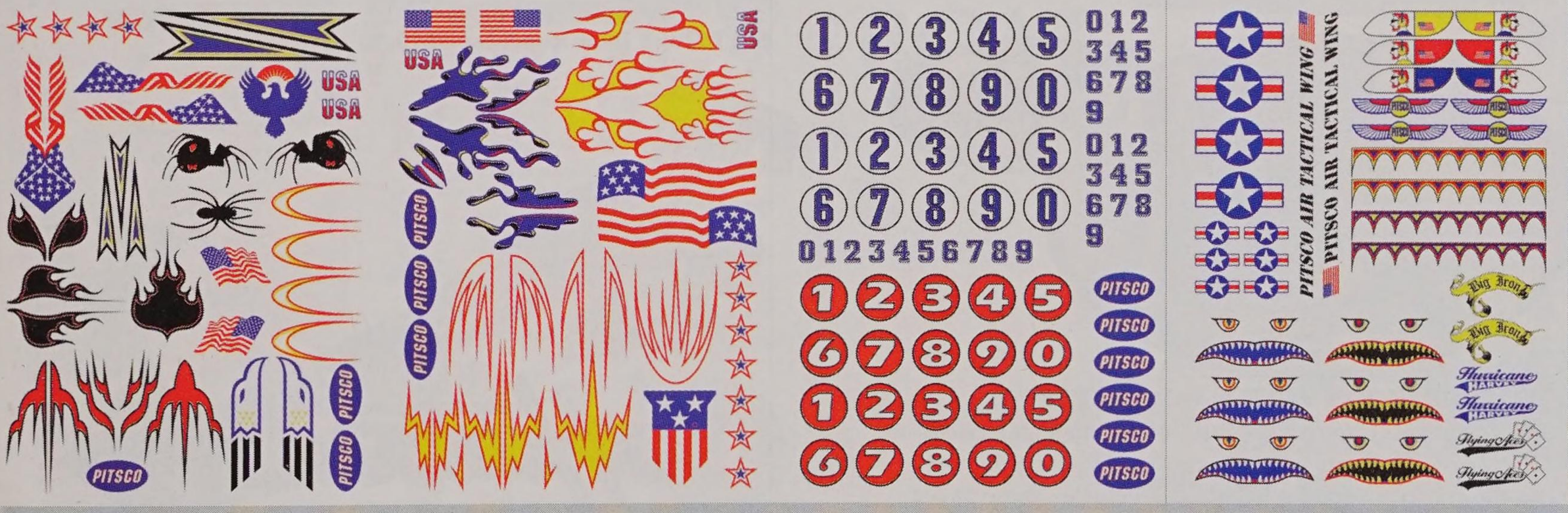
USBORNE BOOK OF CUTAWAY CARS

There is no better way to discover how cars run than to cut away their bodywork and see what is going on inside. This book features beautifully detailed cutaway illustrations and clear text that explains many of the principles behind how cars work. Action-packed photographs bring to life all sorts of cars, from rugged, off-road vehicles to the sleekest sports models. Paperback, 32 pages.

Level: Middle School-High School

L754876—$7.95

Mechanical Engineering 24-25
Motorized Simple Machines 26-27
Wheels & Axles/ Gears 28-29
Levers/Pulleys. . . . 30-31
Early Simple Machines 32-33
LEGO Designer . . 34-35
Mousetrap Vehicles. 42-43



B C D E

PITSCO DECALS

These decals will add unique flare to scale models, racers, rockets, model airplanes, and more! Pinstripe decal sheet is 4" x 24" and other decal sheets are 6" x 8".

A. L754540 Pinstripes—$2.95
B. L754544 Neat Stuff—$2.95
C. L754543 Flags & Flames—$2.95
D. L754542 Numerals—$2.95
E. L754541 Plane Art—$2.95

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

Wheels in the racer kit are different than those shown in photo.

PITSCO FOLD-N-ROLL RACER KIT

A collection of cool and colorful hot rods that can be cut out and folded into 3-dimensional vehicles! Sixteen sweet, street machines are printed in color on the card-stock pages of the book. Enough wheels and axles are provided to make all 16 models into rolling vehicles. A great elementary transportation activity!

L754546—$29.95

PITSCO DR. ZOON FOLD-N-ROLL VIDEO

Dr. Zoon gets into rock 'n' roll – or maybe that's *Fold-N-Roll*! Give your students a "push start" as Dr. Zoon demonstrates the construction of a *Fold-N-Roll* vehicle. These paper cars are excellent vehicles for teaching students about many scientific principles, and Dr. Zoon adds his own special touch in explaining key concepts, which include friction, rolling friction, and potential and kinetic energy.

Time: 20 minutes.

Level: Intermediate-Middle School

L757053—$24.95

FreeFax™ Orders!
888-534-6784

PITSCO FOLD-N-ROLL RACER TEMPLATE PAKS

Racers lettered above are available in packages of 25. Wheels and axles not included.

A. L757362 Quarter Pounder—$19.95
B. L757363 Red/Yellow Dagger—$19.95
C. L757364 Formula 1—$19.95
D. L757365 Red Roadster—$19.95
E. L757366 Blue Roadster—$19.95

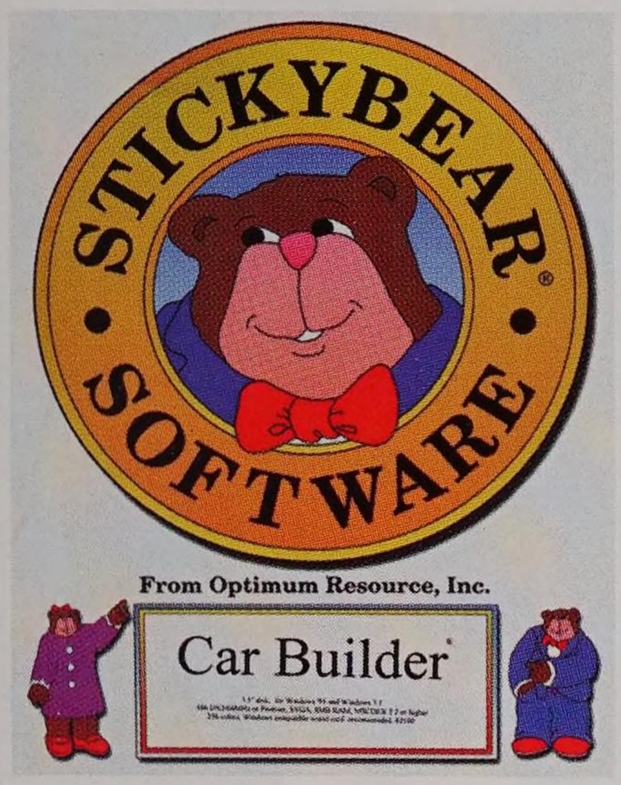
PITSCO HARTMAN PAPER RACER EXPLORE-A-PAK

Meet Rhonda Hartman! Rhonda is a top-fuel dragster driver, who competes at the national level.

Your students can build their own versions of the Hartman dragster! The dragster's image is printed in color on a sheet of card-stock material. Students simply cut and fold, then attach wheels and axles, and they're ready to roll! Pack includes enough car bodies, wheels, axles, and axle tubes to build 25 racers.

L754549—$34.95

Mechanical Engineering 24-25
Motorized Simple Machines 26-27
Wheels & Axles/ Gears 28-29
Levers/Pulleys. . . . 30-31
Early Simple Machines 32-33
LEGO Designer . . 34-35
Mousetrap Vehicles. 42-43



CAR BUILDER SOFTWARE

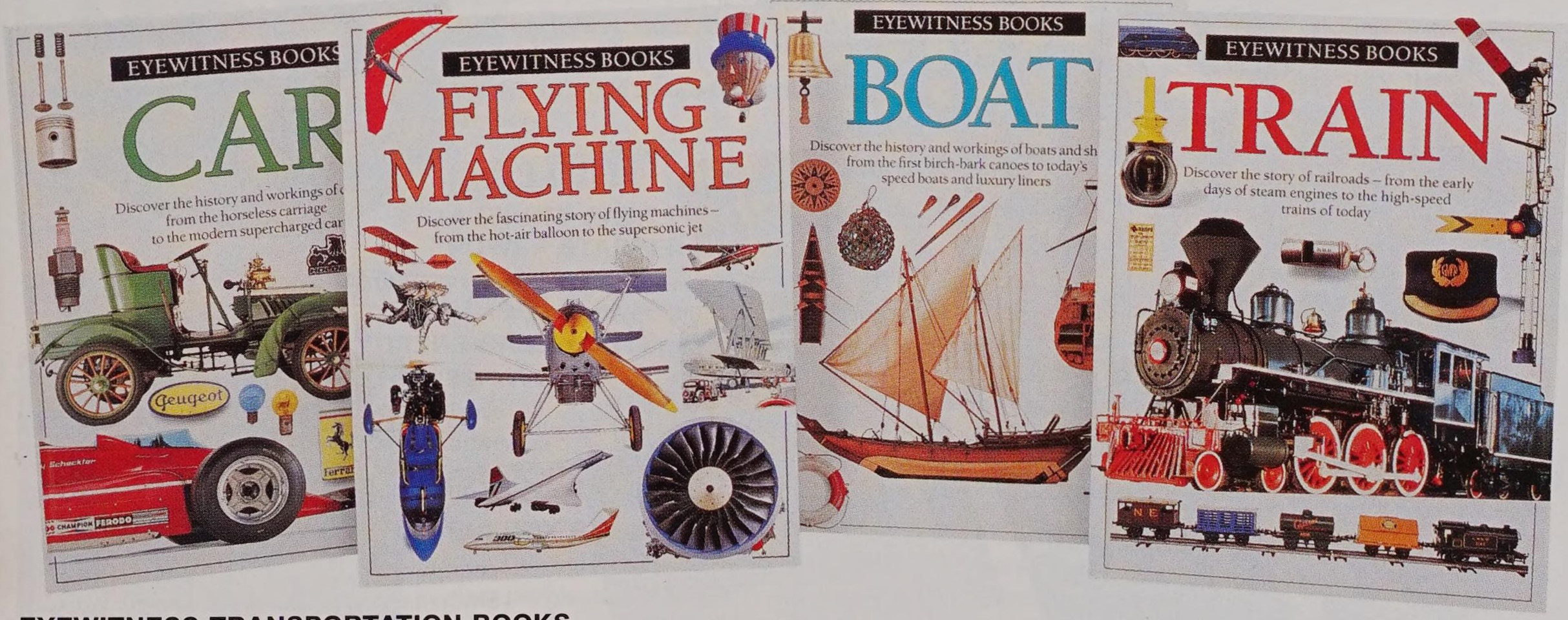
Learn firsthand how it feels to be a car designer! Determine the aerodynamics, fuel efficiency, racing capability, engine, chassis, and suspension system. After your car is built, it is run through a full testing procedure that includes a wind tunnel and test track where the test driver will comment on your design. At the end of testing, save your car to disk with all of its testing information for comparison with other designs. Recommended for ages 8 and older. School versions include two copies of the software and a set of 12 lesson plans on incorporating the program into your curriculum. Each pack includes six copies of the software.

	Consumer	School	Lab Packs
Apple 3.5"	**L751232—$80**	**L755028—$120**	**L751234—$195**
Macintosh CD	**L716138—$80**	**L755029—$120**	**L755025—$195**
DOS 3.5"	**L751233—$80**	**L755030—$120**	**L751236—$195**
Windows CD	**L716139—$80**	**L755031—$120**	**L755026—$195**
Hybrid CD	**L755024—$80**	**L755032—$120**	**L755033—$195**

TURBO 2000 KIT

Rule the road with *Turbo 2000,* a super race car that blasts off the starting gate and speeds to the finish line using its direct motor drive. The kit teaches basic principles of electricity and, with the optional solar battery, can be used to teach the fundamentals of solar energy. Includes assembly instructions and miniconstruction projects. AA batteries and solar battery sold separately. Ages 10 and up.

L757191—$22
L750943 Solar battery—$19.95
L751046 AA batteries (pkg of 2)—$2.65



EYEWITNESS TRANSPORTATION BOOKS

Eyewitness books are immensely popular for a good reason – they're visually stunning. Packed with beautiful, full-color photographs on a white background, they are uniquely attractive. They're also packed with great information presented in easy-reading text. They add up to a fascinating learning experience for students. Hardback, 63 pages.

Level: Middle School-High School

L752226 Car—$19
L752287 Flying Machine—$19
L752228 Boat—$19
L752227 Train—$19

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

48 eLAB
Energy, Work, Power

EXCLUSIVE

ELAB ENERGY, WORK, POWER STARTER SET #979680

Explore the relationship between energy generation, storage, and usage through eLab activities. This set's unique potential, kinetic, and electrical energy components aid students in understanding both conventional and renewable energy.

Students can use the eLAB *Energy, Work, Power Starter Set* to build generators, mechanical capacitors, winches, and model cars. This set is for students ages 9-16.

There are 804 elements, including four capacitors, four motors, four sorting trays, and four sets of building instructions. For four groups of two to four students.

L979680—$250

Order Online!
www.pldstore.com

eLAB
LEGO SETS FOR SCHOOLS

MOTIVATED LEARNING

For many students, energy is a difficult and abstract concept. LEGO Dacta has designed eLAB to make it easier. eLAB presents students with an inspiring and captivating hands-on approach to learning about energy. The worksheets are easy to understand, and the models are easy to use. Through the many activities, students become acquainted with real-life mechanisms, such as capacitors, windmills, and solar cells. eLAB is an exciting and absorbing introduction to specific cross-curricular topics.

STRUCTURED TEACHING

Teachers can quickly get a whole class working with eLAB. Cost-efficient and easy to implement, eLAB provides teachers with a structured teaching plan for guiding students step-by-step through the fundamental principles of energy. A minimum of preparation is sufficient for teachers to devote maximum classroom time to experimenting, measuring, and learning.

ELAB IN THE CURRICULUM

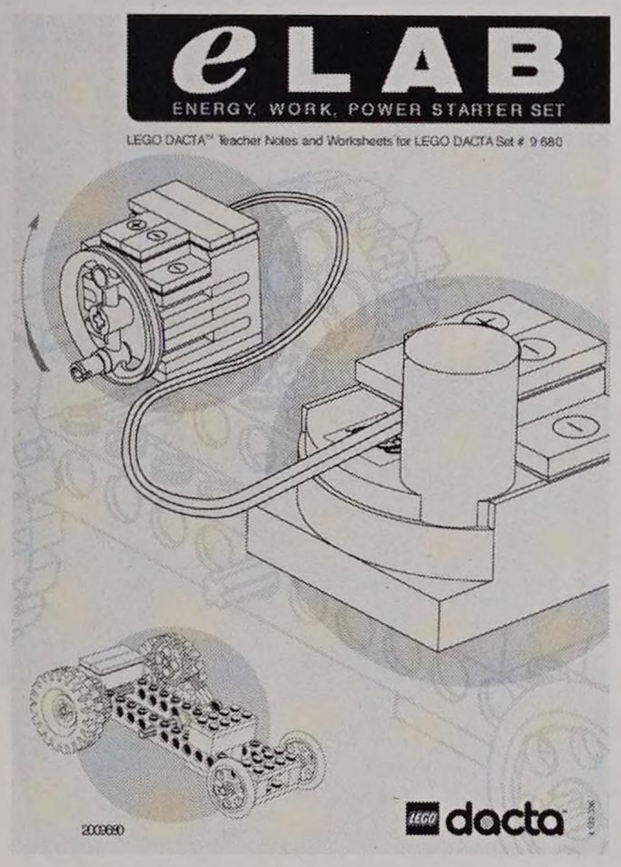
Designed to cover basic topics in physical science, as well as bring relevance to the science classroom, eLAB will fit easily into your curriculum. Basic topics covered by eLAB products include:

- What is energy?
- Potential energy
- Movement or kinetic energy
- Converting potential energy into kinetic energy
- Storing energy in an elastic band
- Storing electrical energy
- Energy efficiency
- Distributing energy
- Renewable energy from sun, wind, and water

• eLAB Energy, Work, Power 48-49
eLAB Renewable Energy 50-51
Ray Catcher 52-53
Pneumatics 56-57

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html



ELAB ACTIVITY PACKS

The eLAB *Activity Packs* provide a logical step-by-step guide to energy projects and activities.

The packs are divided into units that establish learning objectives, suggest topics for discussion, and supply a useful framework for individual lessons, thus reducing preparation time to a minimum.

A reproducible series of worksheets are included. The motivating assignments encourage students to conduct experiments and increase their knowledge and skills at their own pace. At the end of each worksheet, students are asked to summarize what they have learned, providing the teacher a simple means of monitoring their progress.

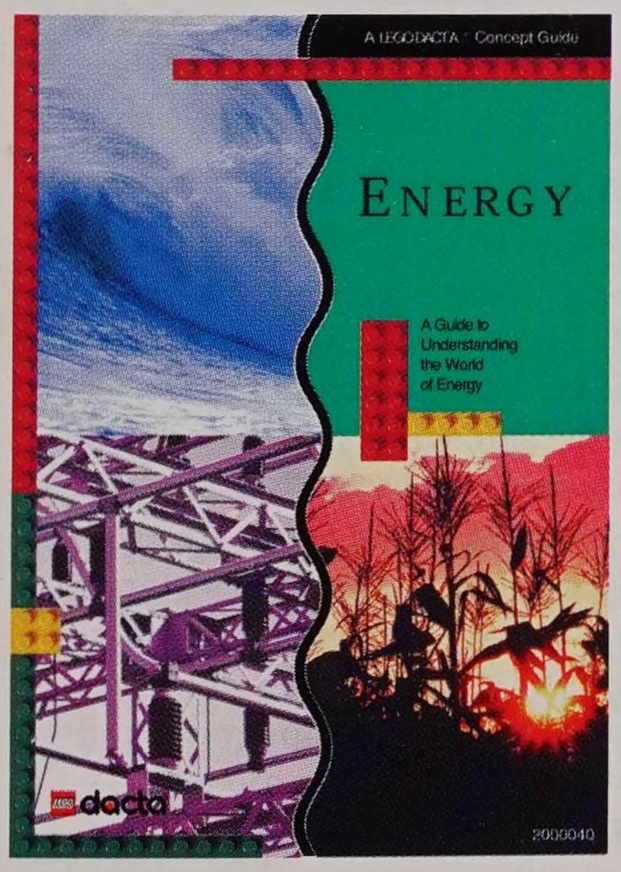
EXCLUSIVE

ACTIVITY PACK FOR ELAB ENERGY, WORK, POWER STARTER SET #909680

A 62-page black-and-white activity pack presents learning objectives, topics for discussion, and worksheets covering basic principles of energy.

L909680—$25

For more information about eLab check our Web site at www.pitsco-legodacta.com



EXCLUSIVE

ENERGY CONCEPT GUIDE #900040

This light, informative concept guide puts energy in a clear perspective! It is a fact-filled introduction to energy, the scientists who discovered electrical energy, and methods for measuring this intangible commodity. Real-life examples highlight some of the ways in which energy can be put to work and some of the renewable energy sources capable of meeting a growing proportion of our power requirements. Brings the world of energy to life!

L900040—$17.50

PITSCO LEGO dacta
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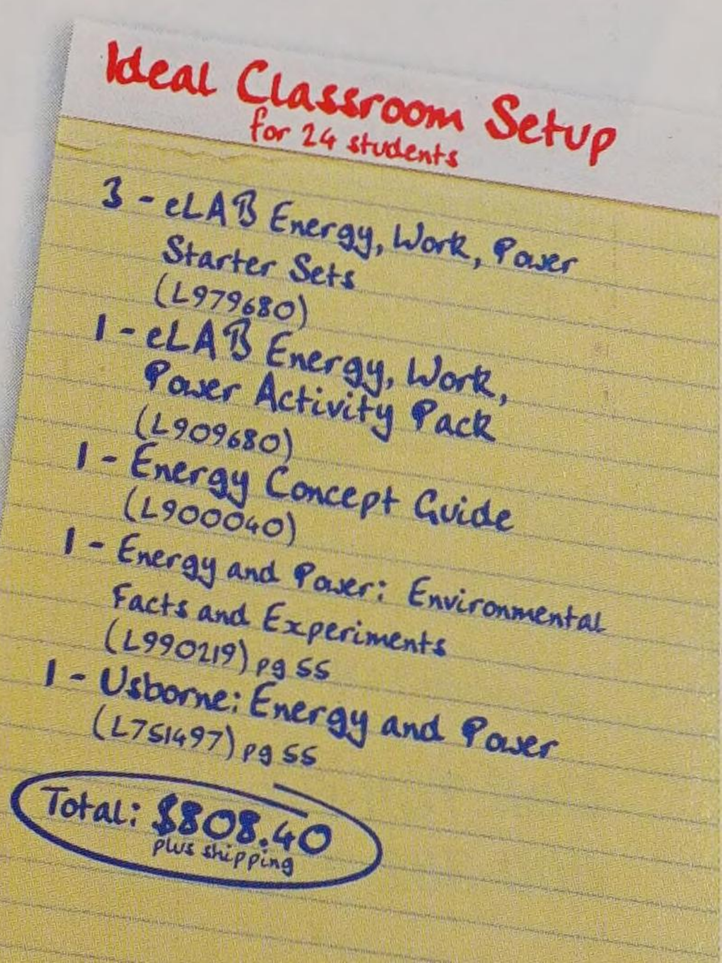
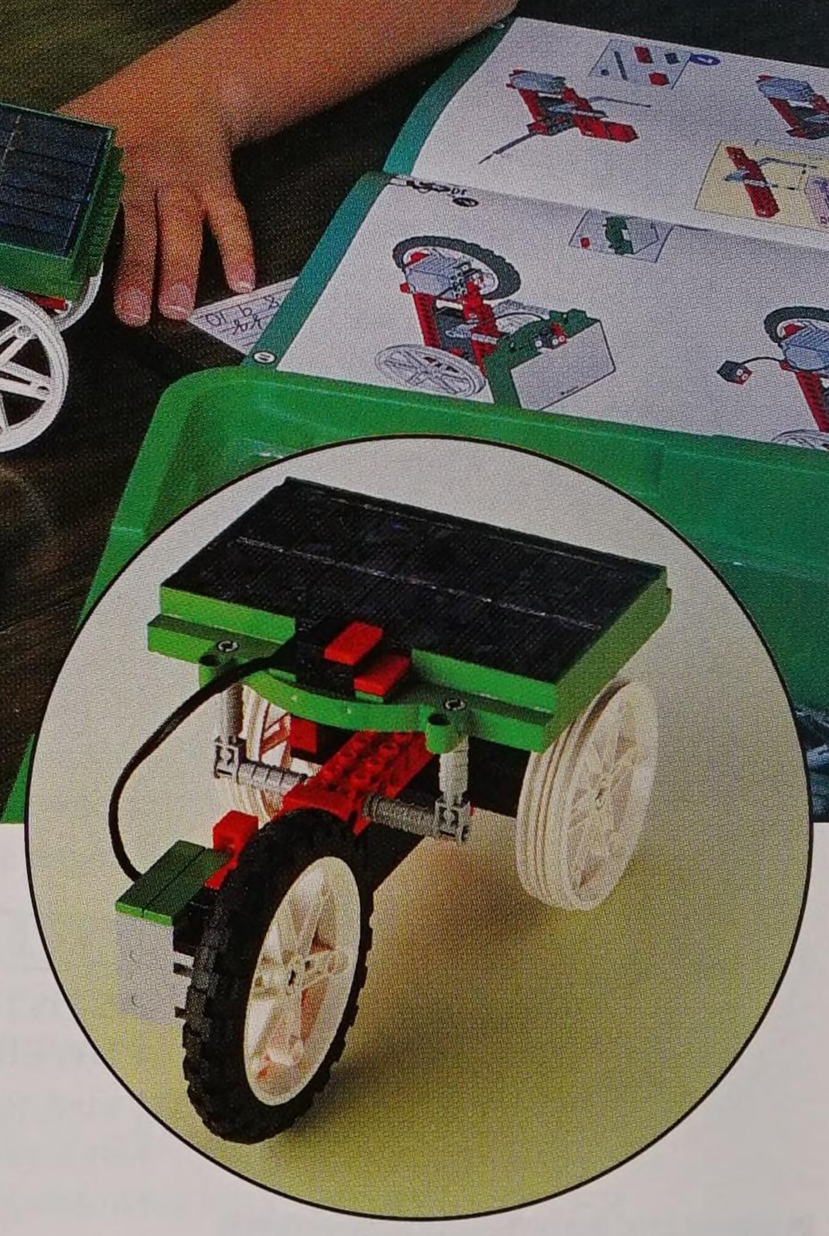


50 eLAB
Renewable Energy



EXCLUSIVE

THE ELAB RENEWABLE ENERGY SET #979681

The eLAB *Renewable Energy Set* expands upon the energy themes presented in the *Energy, Work, Power Starter Set*, inviting students to explore the possibilities of sustainable energy from the sun, wind, and water. Solar energy can be captured by the LEGO *Solar Cell* and used to power a model Ferris wheel or car. Alternatively, create a windmill or watermill and witness wind or water power in action!

There are 721 elements, including one solar cell, one motor, two sorting trays, and building instructions for seven models.

L979681—$140

Call Toll Free!
800-362-4308

eLAB

LEGO SETS FOR SCHOOLS

eLAB Energy, Work, Power 48-49
• *eLAB Renewable Energy* 50-51
Ray Catcher 52-53
Pneumatics 56-57

DEVELOP SPECIFIC SKILLS WITH ELAB PRODUCTS

With eLAB sets, students can develop and build many skills in math, science, and technology, including the following:

- Investigating ideas
- Predicting results
- Considering factors that influence results
- Obtaining and recording data
- Analyzing results
- Evaluating strengths and weaknesses of data
- Drawing conclusions
- Communicating

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

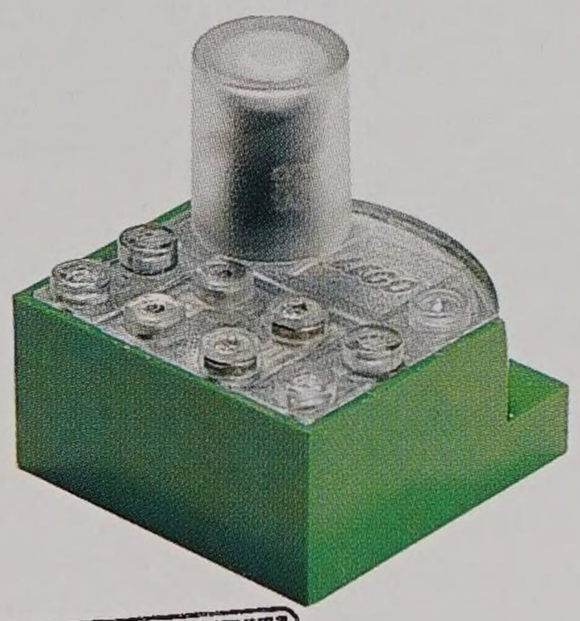
EXCLUSIVE

LEGO SOLAR CELL #979912

This solar cell is built tough to withstand student use. The LEGO *Solar Cell* provides sufficient power to operate LEGO models. Easy to connect.

L979912—$35

Professional staff development available in most states. Call for details. 1-800-362-4308

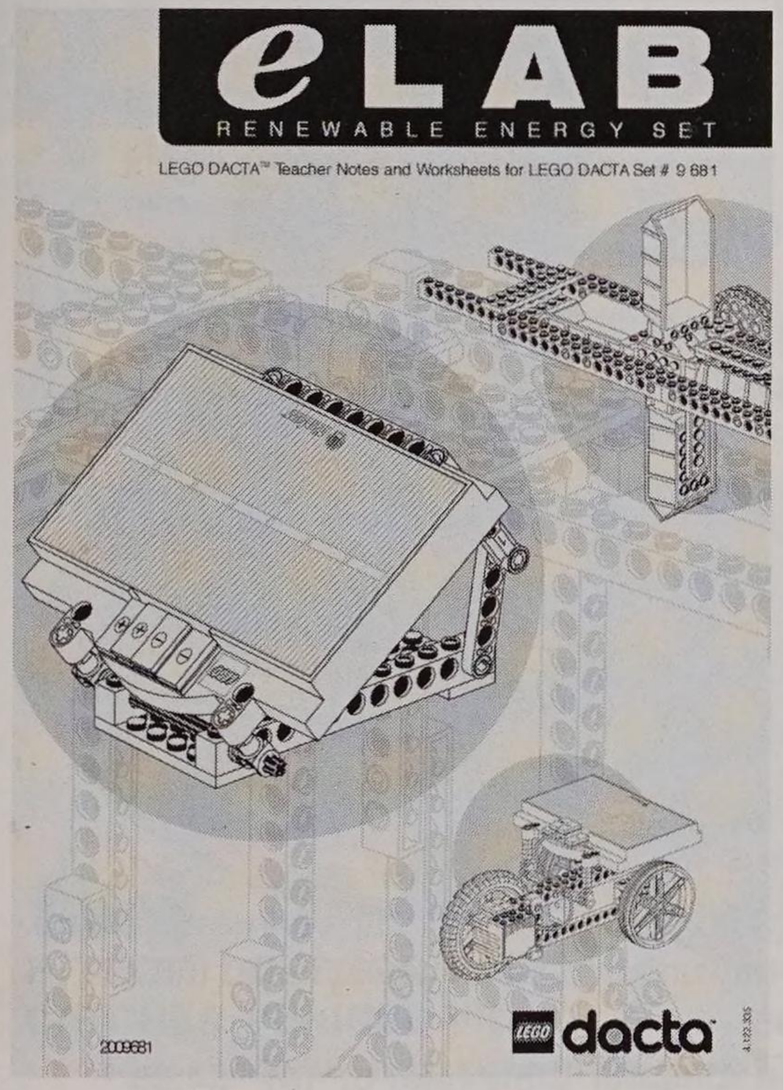


EXCLUSIVE

LEGO CAPACITOR #979916

An innovative LEGO device for efficient energy storage, the LEGO *Capacitor* is easy to connect and makes the principles of storing and transferring energy easy to understand.

L979916—$15



EXCLUSIVE

ACTIVITY PACK FOR ELAB RENEWABLE ENERGY SET #909681

A 74-page, black-and-white activity pack presents learning objectives, topics for discussion, and worksheets covering the principles of renewable energy.

L909681—$25

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

Ideal Classroom Setup
for 24 students

- 6 - eLAB Renewable Energy Sets (L979681)
- 1 - eLAB Renewable Energy Activity Pack (L909681)
- 1 - Energy Concept Guide (L900040) pg 49
- 1 - Science in Action - Solar Energy (L756125) pg 55
- 1 - Interactions - Solar Energy (L756588) pg 53
- 1 - Energy and Power - Environmental Facts and Experiments (L990219) pg 55

Total: $959.35 plus shipping

52 Ray Catcher

PITSCO RAY CATCHER SPRINT DELUXE KIT

Everything you need to build a complete vehicle for the Junior Solar Sprint competition! This kit contains the required solar panel and electric motor plus two 10-1/2" x 4" balsa sheets, four nylon spacers, two alligator clips, two 5-1/2" axles, four wheels, four rubber bands, one plastic gear font, a neon blue straw, and instructions.

L721211—$54.95

PITSCO RAY CATCHER SPRINT KIT

Now! A new, improved kit to replace our original *Sun Sprint Kit*! The new solar panel is slightly smaller (10.5" x 5.0" x 0.07"), less breakable, and has two mounting holes, enabling the student to attach it to the car body with screws. The kit still contains all the official parts and meets the minimum specifications required by the Junior Solar Sprint competition. It includes the solar panel, the official electric motor, and a pair of small alligator clips for easy hookup. Chassis, wheels, and transmission are not included in this kit.

L721210—$44.95

L754665 Alligator Clips (pkg of 10)—$4.95

L751046 AA Batteries (pkg of 2)—$2.65

FreeFax™ Orders!
888-534-6784

PITSCO RAY CATCHER SPRINT POWER PAK

The economical way to implement a solar-racing competition!

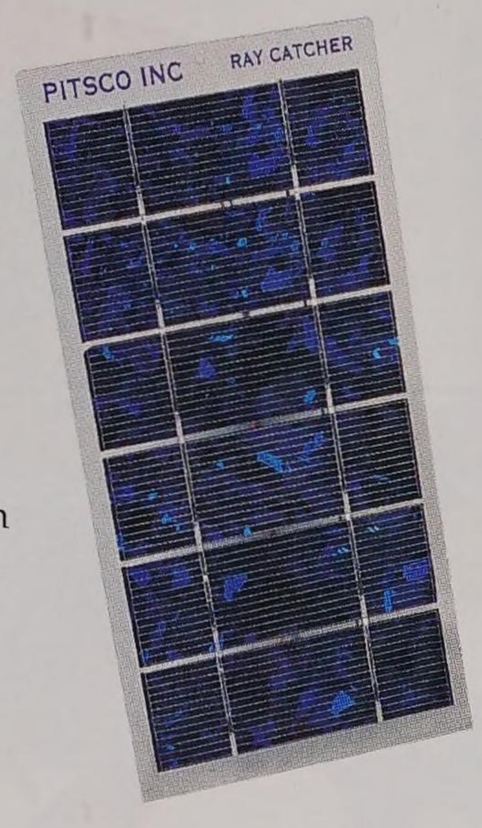
The *Ray Catcher™ Sprint Power Pak* gives you the basics for 25 students (50 working in teams of two) to build electric-powered vehicles. First, the students build the vehicle using a battery holder and two AA batteries (sold separately) for each vehicle. For solar testing and on race day, students can use one of the five *Ray Catcher* solar panels with alligator clips to see how their cars perform! Panels may be used again and again in following years or could be used as prizes for the top five cars.

Ray Catcher Sprint Power Pak includes:

- 5 Ray Catcher solar panels
- 25 – 280 motors
- 25 AA battery holders
- 10 alligator clips
- Assembly and competition instructions

L721532—$325

L751046 AA Batteries (pkg of 2)—$2.65



PITSCO RAY CATCHER (SOLAR PANEL ONLY)

This is the official solar panel of the Junior Solar Sprint competition. It measures 10.5" x 5.0" x 0.08". It is built of lightweight, yet super-strong, high-impact fiberglass laminate and is weather resistant. The output is 2.6 to 2.8V at 1,100 mA. Includes 7" color-coded lead wires.

L721112—$39.95

10 for $359

100 for $3,200

eLAB Energy, Work, Power 48-49
eLAB Renewable Energy 50-51
• *Ray Catcher 52-53*
Pneumatics 56-57

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

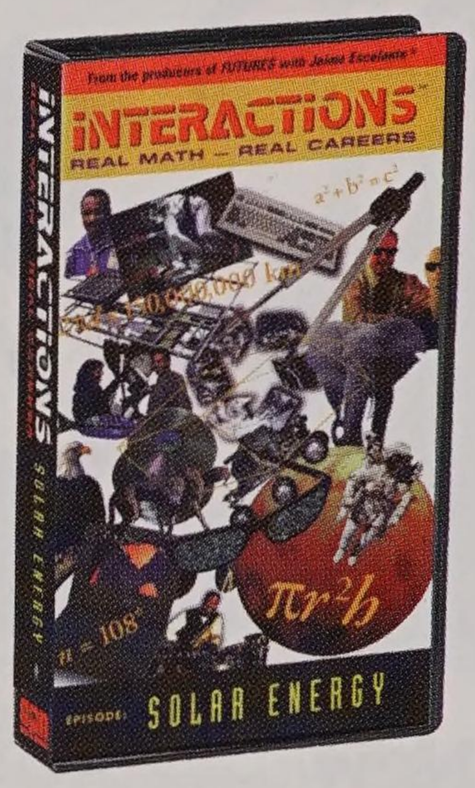
PITSCO RAY CATCHER SPRINT DELUXE POWER PAK

Includes *Power Pak®* basics for 25 students (or 50 students working in teams of two) *and* everything else needed for that special solar car!

- 5 *Ray Catcher* solar panels
- 25 – 280 motors
- 25 solar panel blanks
- 50 balsa sheets
- 60 alligator clips
- 100 wheels
- 100 rubber bands
- 25 neon blue straws
- 100 nylon spacers
- 50 plastic Delrin® axles
- 25 plastic gear fonts
- 25 two-cell AA battery holders
- Assembly and competition instructions

L721533—$395

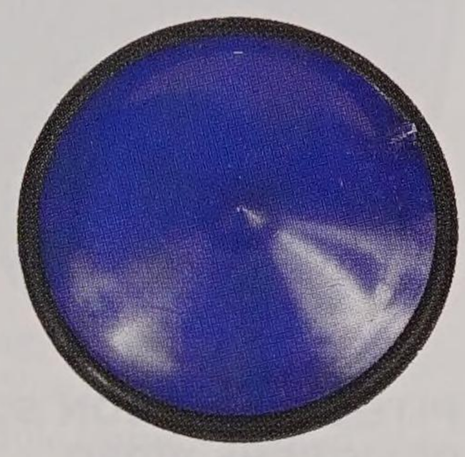
INTERACTIONS: SOLAR ENERGY



Solar Energy, a video from the Real Math – Real Careers series, covers the concept of photovoltaics (electricity generated directly from sunlight). An engineer from Sandia National Laboratory in New Mexico describes how to determine the electricity needs of a village in Nicaragua and shows how solar technology changes the villagers' lives. Math topics include exponents, geometry, and percents. Time: 12 minutes.

Level: Middle School-Adult

L756588—$49.95



PITSCO SOLAR WHEELS

Smooth wheels with very low rolling resistance. 1-1/8" diameter with O-ring "tire."

L713340 (pkg of 100)—$25

10 for $225

New

PITSCO DR. ZOON RAY CATCHER VEHICLE VIDEO

Ride the light fantastic with Dr. Zoon as he demonstrates the construction of a *Ray Catcher* vehicle!

The *Ray Catcher* vehicle is designed for competition in the Junior Solar Sprint contest. Allow students to watch this video as an introduction to building the *Ray Catcher*.

Dr. Zoon also discusses some of the scientific concepts that parallel the activity, including photovoltaics, gears, rolling friction, and aerodynamics. Time: 15 minutes.

Level: Middle School-High School

L757052—$24.95

WIDE RUBBER BANDS

Approximately .5" width x 2" length.

L756136 (pkg of 50)—$1.95

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

Ideal Classroom Setup
for 24 students

1 - Ray Catcher Sprint Deluxe Power Pak* (L721533)
6 - Cool-Melt Glue Guns (L752064) pg 77
1 - Oval Glue Slugs* (L752061) pg 77
25 - AA Batteries (pkg of 2) (L751046)

Total: $563.25 plus shipping

* Consumables

PITSCO SOLAR DESIGNER'S KIT

With this kit a team of two students makes a solar-powered car by using the supplied parts and instructions. The team may modify the car to include new ideas. Other project ideas are suggested. Kit contains the following: solar panel (.45V, 400 mA) 1-3/4" x 2-15/16", DC motor, plastic car body, Pitsco plastic gear font, two axles, four Pitsco wheels, four 1/8" brass washers, propeller, and instruction guide. Car will travel under bright sunlight.

L750073—$13.50
10 for $121.50

SOLARPAK
L751417 (for 25 students)—$295

New

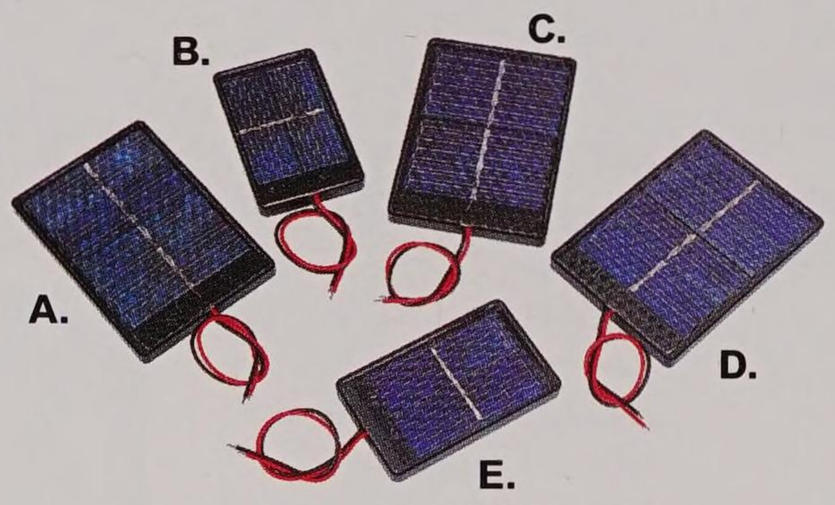
PITSCO DR. ZOON SOLAR DESIGNERS VIDEO

The Sun is coming up, and Dr. Zoon is ready for it!

Join Dr. Zoon as he puts the energy from the Sun to work in a solar vehicle. Watch the step-by-step process of constructing this remarkable little solar car.

This is a great introductory activity for alternative energy! Time: 20 minutes.
Level: Middle School-High School

L757230—$24.95



SOLAR MINI PANEL

Connect these solar panels to motors to make solar-powered vehicles and other projects. These solar cells are enclosed in plastic cases, so they are durable in your classroom. Panels A, C, and D are 2-5/8" x 3-3/4". Panels B and E are 1-3/4" x 3".

A. L756871 (0.5V, 800 mA)—$8.95
10 for $81

B. L756870 (1.0V, 200 mA)—$4.95
10 for $45

C. L756851 (1.0V, 400 mA)—$4.95
10 for $45

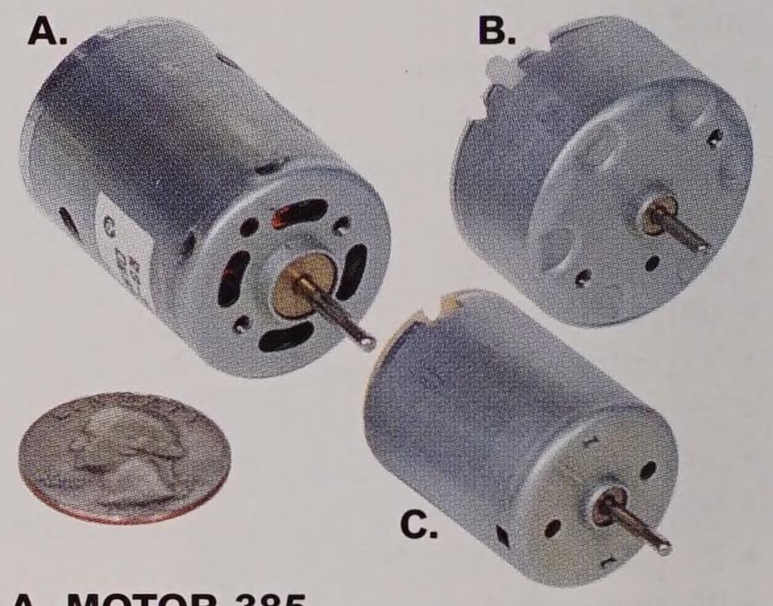
D. L756852 (2.0V, 200 mA)—$8.95
10 for $81

E. L750074 (.45V, 400 mA)—$4.95
10 for $45

PITSCO PLASTIC GEARS

Use with your inventions, vehicles, and other moving models. Gear hole is 1/8" (3 mm) and will fit on 1/8" axles. The smallest gear has a hole (1/16" ID) that fits the shaft of our mini motors.

L714841—$5 10 for $45 100 for $405



A. MOTOR 385

A heavy-duty motor with carbon brushes. It is an excellent choice for robotic designs, model racing cars, R/C vehicles, or any other high-torque, low-power consumption application. 6-24VDC, 1,300 mA. No load speed 14,300 rpm, stall torque 7.71 oz/in.

L750076—$4.50
10 for $40.50

B. MOTOR 500

Use this motor with our Pitsco plastic gears. Smooth running motor with very low starting friction. Endless design possibilities. Operating range: 1.5-4VDC, 150 mA.

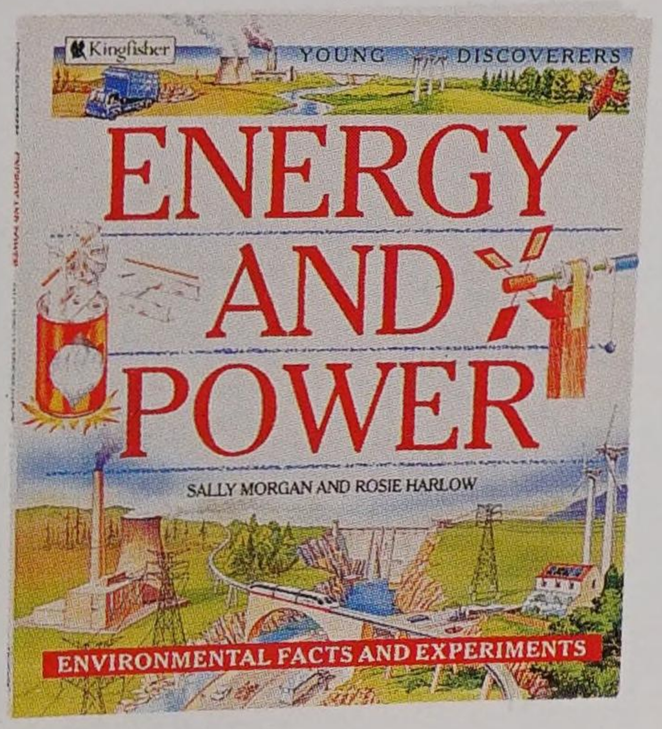
L750075—$3.50
10 for $31.50

C. MOTOR 280

A great little motor for small electric vehicles or solar racers. This is the motor specified by the Junior Solar Sprint competition! Operating voltage: 1.5-3VDC at 330 mA.

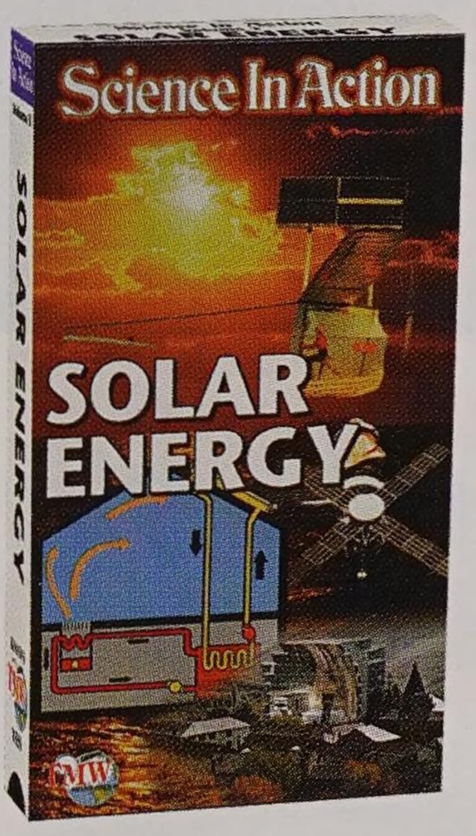
L754428—$1.75
10 for $15.80

eLAB Energy, Work, Power 48-49
eLAB Renewable Energy 50-51
Ray Catcher 52-53
Pneumatics 56-57



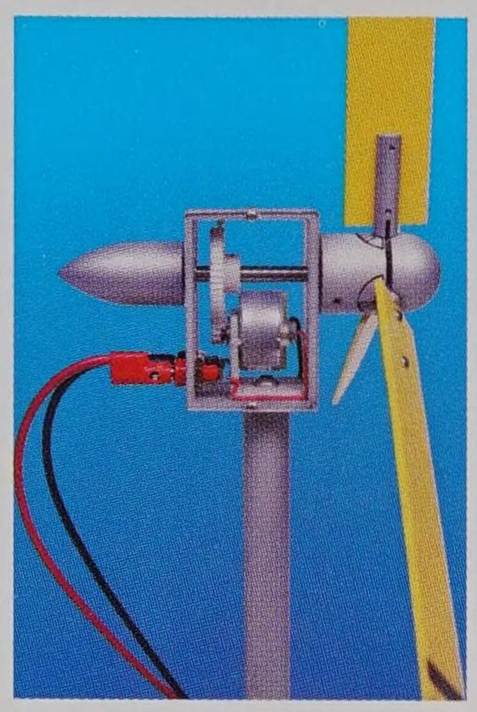
ENERGY AND POWER: ENVIRONMENTAL FACTS AND EXPERIMENTS

A brief, very clear introduction to energy and power and their uses. Each section includes a "Do It Yourself" activity illustrating concepts related to different types of power generation and energy-related pollution. Excellent for Grades 3-5. Paperback, 32 pages.
Level: Early Learning-Intermediate
L990219—$6.95



SCIENCE IN ACTION: SOLAR ENERGY VIDEO

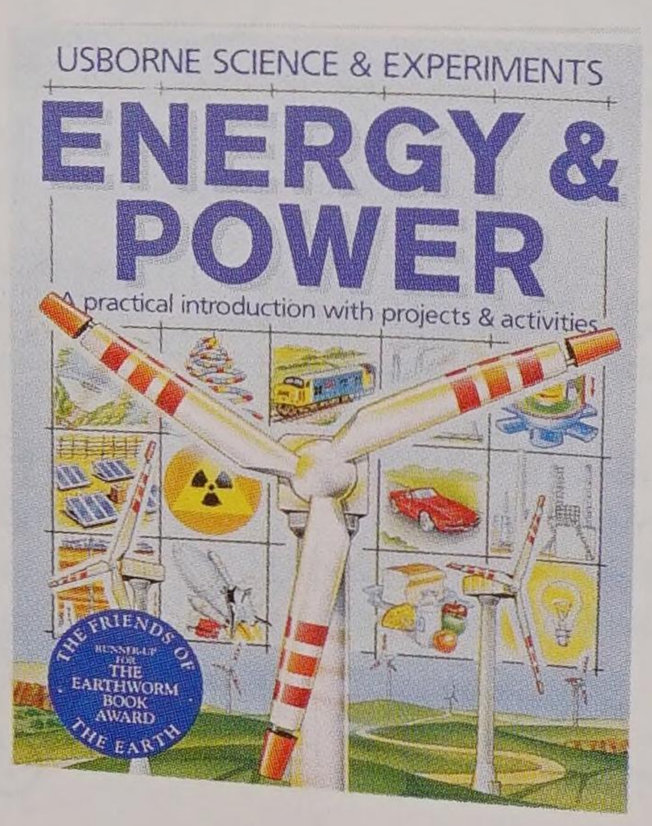
This volume of a six-volume series explores solar energy. In its three segments: "Capturing Solar Energy," "Transferring Solar Energy," and "Storing Solar Energy," students will learn how the Sun's energy is captured and controlled to serve many important and efficient uses. Between each segment, questions challenge the students to think about and respond to what has been taught. In addition, there is a short break point between each segment that gives the teacher the opportunity to discuss the section with the students. Time: 18 minutes.
Level: Middle School
L756125—$19.95



PITSCO WINDYNAMO WIND GENERATOR

Demonstrate the use of alternative energy to students by harnessing the wind to generate electricity! The Pitsco *Windynamo* converts the wind produced by a 20" box fan into electrical energy and sends it to a multifunction output module. The output module features a liquid crystal readout that displays the voltage produced and three output devices that convert the electricity into other energy forms. Sound, light, and mechanical energy (or any combination) can be observed with the push of a button. The *Windynamo*'s propeller blades can be adjusted to various pitch angles.

Includes connecting wires and problem-solving activities that introduce students to the principles of wind power. Requires a 20" box fan (not included).
L713291—$495



USBORNE: ENERGY & POWER

This practical introduction represents active science learning of the highest quality.

Basic information of the subject is combined with hands-on activities, experiments, and projects. The latest up-to-date developments are examined along with the environmental problems that might accompany them. Paperback, 48 pages.
Level: Intermediate-High School
L751497—$8.95

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

LEGO Technic

PNEUMATICS I: INTRODUCTION TO AIR POWER SET #979617

EXCLUSIVE

75 building elements

This set is designed for learning introductory pneumatics. Students explore the functions of each compressed-air element as they build and operate simple models. The models include a simple pneumatic circuit, a vertical press, and a scissors lift. Besides discovering the operation of pneumatic systems, students also work with first-, second-, and third-class levers. The set is designed to be used with students working in pairs. It includes:

- Two-way pneumatic cylinder, a pneumatic valve, a hand pump, and tubing
- 3 building cards with step-by-step pictorial instructions
- Sturdy plastic storage case with clear compartmentalized tray
- Pictorial parts list to make cleanup and inventory simple

L979617—$32

Be$t Buy!

EXCLUSIVE

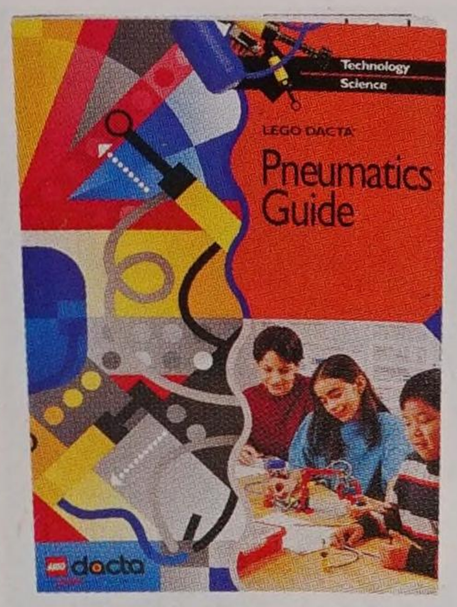
PNEUMATICS I: INTRODUCTION TO AIR POWER CLASS PACK #900022

This pack introduces the basics of pneumatics to an entire class. It's designed for 20 students working in pairs. The pack includes:

- 10 *Introduction to Air Power Sets* (#979617)
- *Pneumatics Teacher's Guide* (#979634)
- *Discovering Fluid Power* video (#771145)

L900022—$350

Call Toll Free!
800-362-4308



EXCLUSIVE

PNEUMATICS TEACHER'S GUIDE #979634

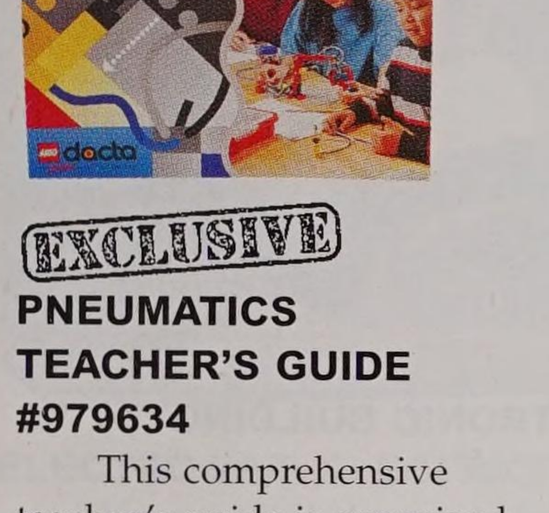
This comprehensive teacher's guide is organized into two modules, one for each of the two pneumatic sets. The *Pneumatics I: Introduction to Air Power* (#979617) activities are designed for the beginning level, while the *Pneumatics II* (#979633) are for more experienced students. Each module includes:

- Introduction and background information
- Pretests and posttests with answers
- Activity copy masters
- Sample solutions
- Teacher's notes

L979634—$25

SPANISH VERSION

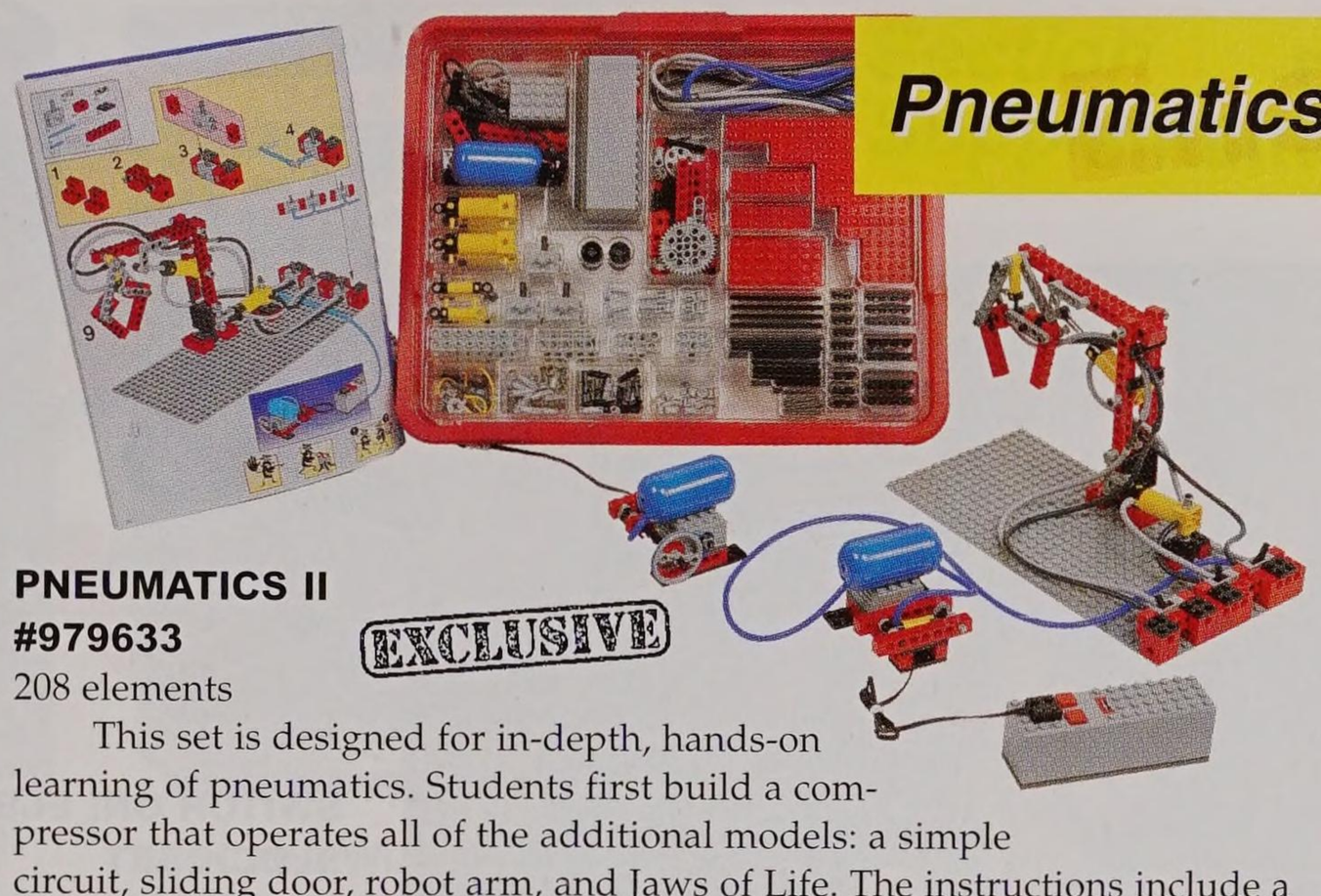
L209634—$25



DISCOVERING FLUID POWER VIDEO

This great 12-minute video covers the basic concepts of fluid power, touches on the scientific principles behind it, and emphasizes its capabilities. It shows real-world examples of both hydraulic and pneumatic applications at work. Designed for science and math teachers and students, it's a super way to introduce the concepts of pneumatics.

L771145—$30



PNEUMATICS II #979633

EXCLUSIVE

208 elements

This set is designed for in-depth, hands-on learning of pneumatics. Students first build a compressor that operates all of the additional models: a simple circuit, sliding door, robot arm, and Jaws of Life. The instructions include a photo of the real-world version of each model. As an option, the models in this kit can be used with the LEGO Dacta 9-volt computer-controlled products. *Pneumatics II* is designed to be used by students working in pairs. It includes:

- 2 two-way pneumatic cylinders, three valves, a motorized compressor module, and pneumatic tubing
- 36-page booklet with five building projects
- 8-page supplemental booklet with optional ideas for computerizing the pneumatic models
- Sturdy plastic storage case with clear compartmentalized tray
- Pictorial parts list to make cleanup and inventory simple

L979633—$100

Be$t Buy!

EXCLUSIVE

PNEUMATICS II: TECHNOLOGY PACK #900023

This special pack works well with the modular approach or can be used to jump-start a class collection. It's designed to be used by six students working in pairs. Includes:

- 3 *Pneumatics II* sets (#979633)
- *Pneumatics Teacher's Guide* (#979634)
- *Discovering Fluid Power* video (#771145)

L900023—$340

SYRINGE MOUNTING CLIPS

L750002 6-cc (pkg of 10)—$17.95

L750003 12-cc (pkg of 10)—$19.95

6-CC SYRINGE

L750973—$.50 ea

10 for $4.50

12-CC SYRINGE

L750974—$.75 ea

10 for $6.70

20-CC SYRINGE

L752525—$.95 ea

10 for $8.50

30-CC SYRINGE

L750975—$1.35 ea

10 for $12.50

35-CC SYRINGE

L752526—$1.50 ea

10 for $13.50

FLEXIBLE TUBING

1/8" inside diameter.

L750972 (100' roll)—$9

L753630 Double-stick Tape—$6.50

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eLAB Energy, Work, Power 48-49
eLAB Renewable Energy 50-51
Ray Catcher 52-53
• *Pneumatics* 56-57

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

Ideal Classroom Setup for 24 students

For elementary school classes
1 - Pneumatics I Class Pack (L900022)
1 - Science Fair Projects: Energy (L756119) pg 61
Total: $359.95 plus shipping

For middle and high school classes
1 - Pneumatics II: Technology Pack (L900023)
9 - Pneumatics II building sets (L979633)
9 - Energy and Power: Environmental Facts and Experiments (L990219) pg 55
Total: $1,302.55 plus shipping

SWITCH ON! ELECTRONIC BUILDING BLOCK SET

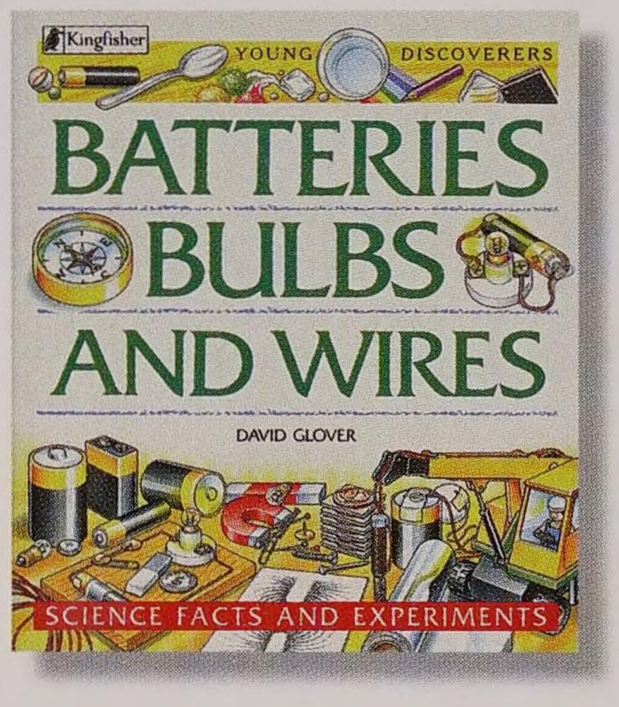
With this innovative set, children as young as eight can discover the basic principles of electronics. In the same way that children build towers with wooden blocks, they can build real, functioning electrical circuits with *Switch On!*

From the most basic to intricate, more than 40 different circuits can be built with the color-coded components. Components are large and easily manipulated by small hands. Set includes battery box, electric motor, fire engine siren, flashing doorbell, diode, resistors, transistors, capacitors, conductors, potentiometer – 50 pieces in all!

Includes complete step-by-step instructions and a base building plate. Requires four AA batteries, sold separately. Ages 8 and up.

L756121—$59.95

L751046 AA Batteries (pkg of 2)—$2.65

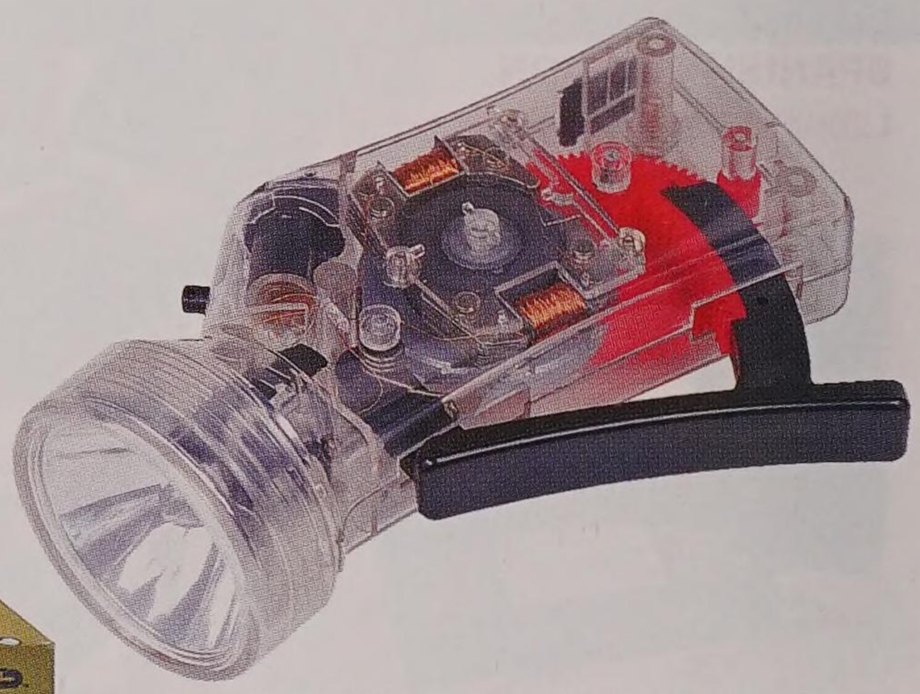


BATTERIES, BULBS, AND WIRES

A great resource book! It's a take-home-and-do book, which portrays the world of science in everyday life. It contains a wide range of safe, easy-to-do experiments, using simple household items, and "eye-spy" observations that give practical understanding to each subject. This is an ideal book for your wonderfully inquisitive young readers. Paperback, 31 pages.

Level: Intermediate

L756070—$7.95



DYNAMO FLASHLIGHT

This cool flashlight pays tribute to Michael Faraday's 1831 discovery: mechanical energy can be converted into electrical energy by moving conductors through magnetic fields. The light requires no batteries; you operate it by squeezing the lever handle, which spins a simple generator. The generator, in turn, powers the light. The clear shell exposes all the internal parts, so you can see the science at work! Includes an extra bulb.

L756062—$14

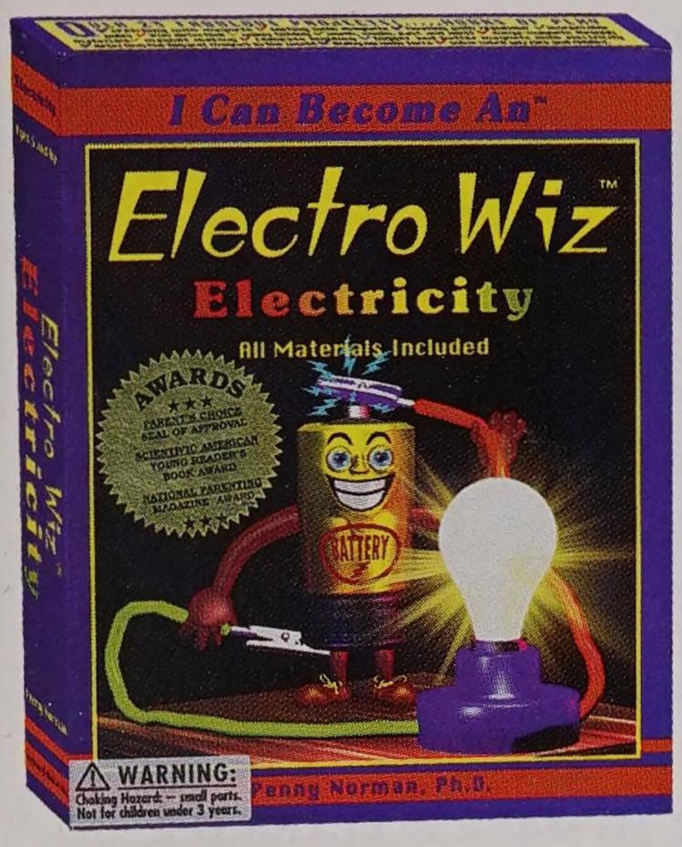
MAGNETS: MAGNET DISCOVERY KIT

Unlock the mystery of magnetism! This kit contains an assortment of powerful magnets, fun accessories, and a booklet full of incredible activities that teach the basic principles of magnetism. Once kids get their hands on these magnets, they'll never want to put them down. So, get ready for some fascinating, fantastic fun with magnets! For ages 8 and up.

L756072—$29.95

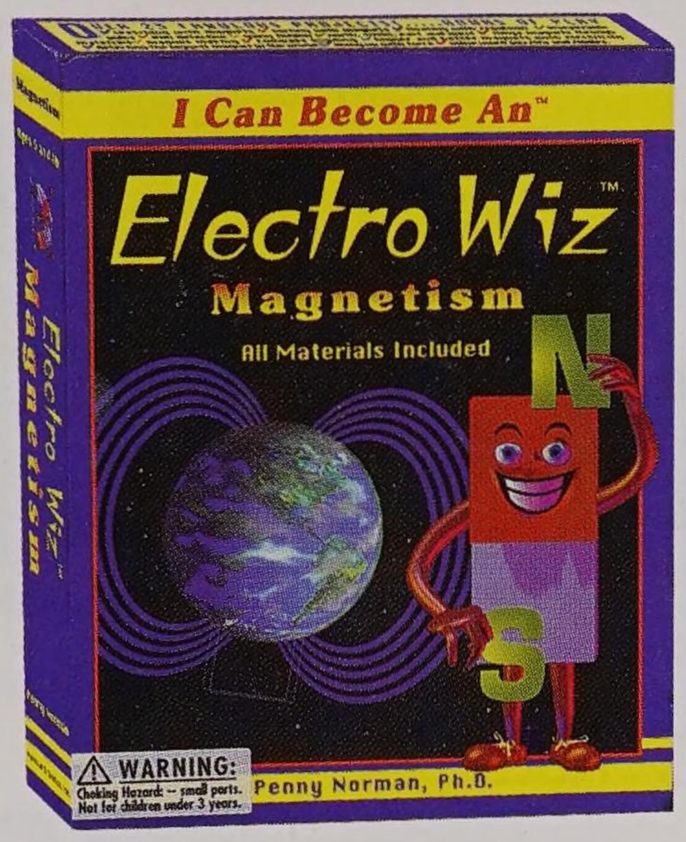
FreeFax™ Orders!
888-534-6784

eLAB Energy, Work, Power 48-49
eLAB Renewable Energy 50-51
Ray Catcher 52-53
Pneumatics 56-57



ELECTRO WIZ: ELECTRICITY

This great little kit can help kids as young as five discover the principles of electricity. The excellent full-color booklet features dynamic 3-D illustrations and concise, kid-friendly instructions. The kit includes everything kids need to complete several fun and simple electricity experiments. Includes electric motor, four color-coded alligator leads, pinwheel, lightbulb and holder, buzzer, LED, hard plastic storage case, 36-page book, and more. Ages 5 and up.
Level: Early Learning-Middle School
L756081—$19.95



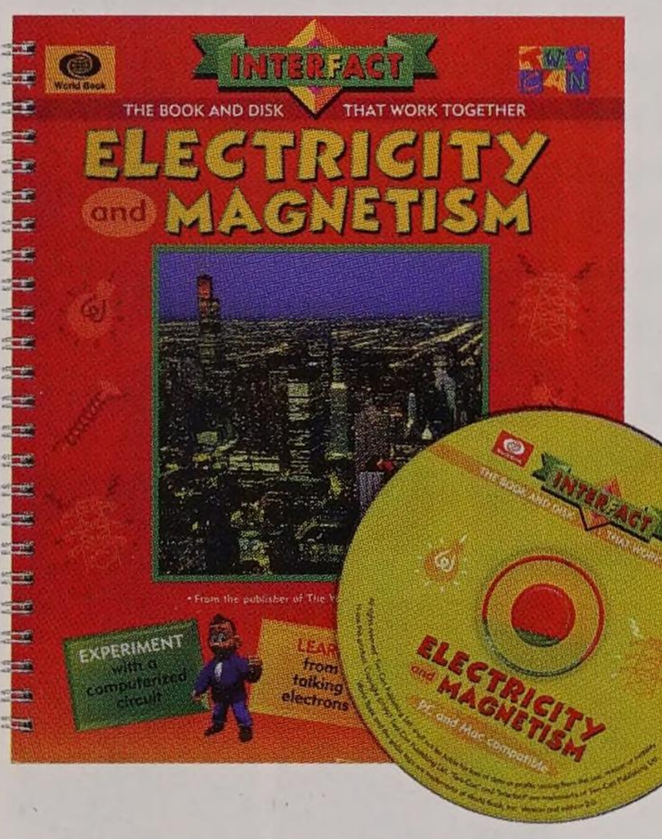
ELECTRO WIZ: MAGNETISM

The 23 fabulous projects in this kit can help young students become magnetism experts. The excellent full-color booklet features dynamic 3-D illustrations and concise, kid-friendly instructions. The kit includes everything kids need to complete several fun and simple magnetism experiments. Includes heavy-duty mega magnet, compass, iron filings, magnet wire and string, stickers, plastic storage box, 40-page booklet, and more.
Level: Early Learning-Middle School
L756082—$19.95

MOO MAGNET

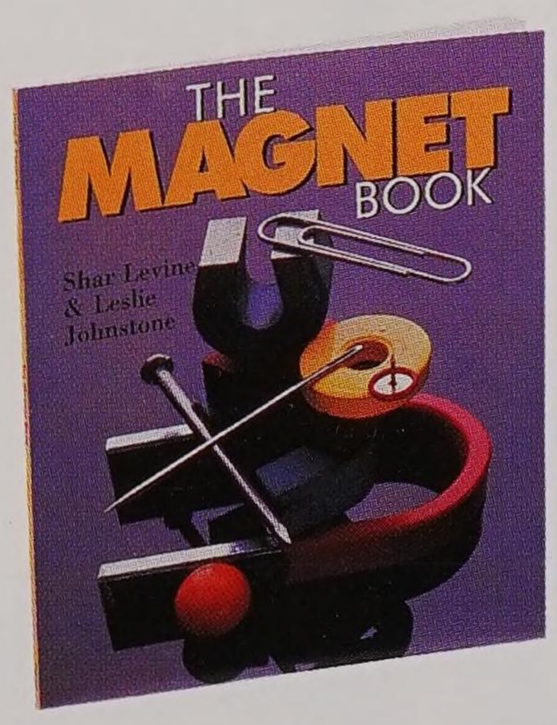
Holy cow! Here's a little-known magnet fact: veterinarians often give 6-month-old calves pills that are actually powerful magnets. The magnets stay in the critters' stomachs for a lifetime, picking up harmful metal, such as staples, nails, and bailing wire, swallowed while grazing.

This fun and educational kit contains one *Moo Magnet* set and a 16-page booklet that helps kids discover the basic principles of magnetism. In national taste tests, three out of four cows preferred *Moo Magnets* over the leading brand. *But seriously folks, these Moo Magnets are not suitable for use in real cows.*
L756071—$7.95



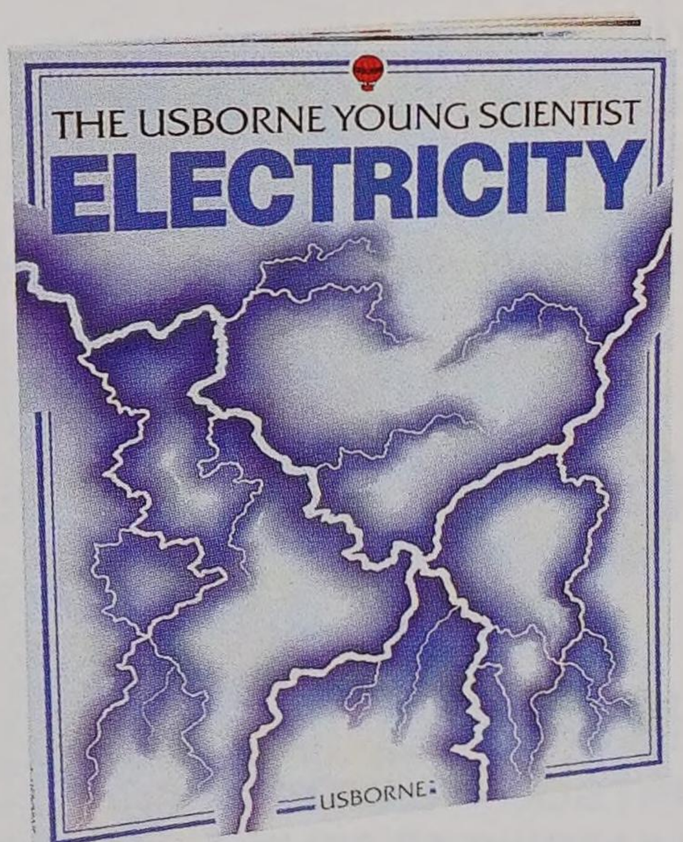
ELECTRICITY AND MAGNETISM BOOK AND CD-ROM

Learn about magnets, polarity, circuits, batteries, and much more with this fantastic, fully illustrated book. Then insert the CD-ROM in your Mac or PC computer, and complete interactive experiments like the computerized circuit and materials conductivity tests. Also, learn how electricity is generated and transmitted about the country, and discover the fundamentals of electricity from talking electrons!
Level: Early Learning-Intermediate
L756132 Mac/Win CD-ROM and book—$15.95



THE MAGNET BOOK

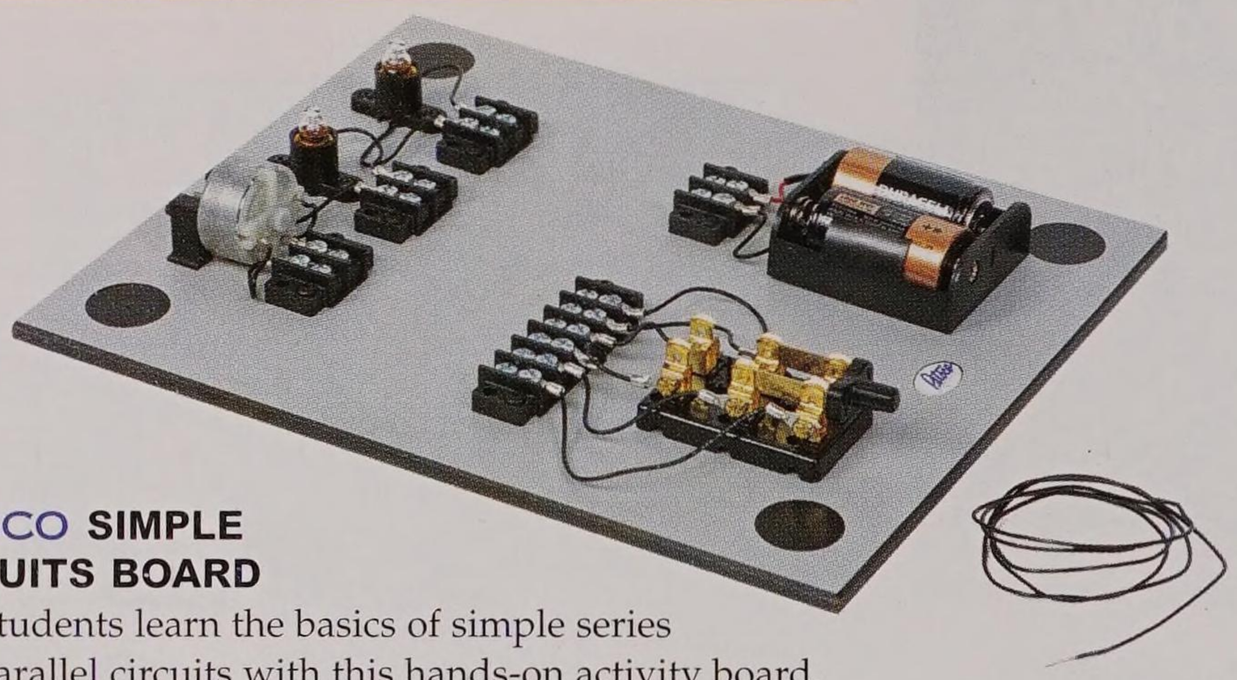
Hours of magnetic fun and discovery will ensue, as kids use this book to penetrate the mysterious world of magnets, using simple materials and the step-by-step instructions given. The book contains 39 games, tricks, and experiments, ranging from magic tricks to perform in public to the construction of an electromagnet and an electric motor. Paperback, 80 pages.
Level: Intermediate-Middle School
L990220—$11.95



USBORNE: ELECTRICITY

This easy-to-read book features exciting color graphics. It's a stimulating introduction to the basics of electricity. Paperback, 32 pages.
Level: Intermediate-High School
L751054—$6.95
10 for $62.60

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION



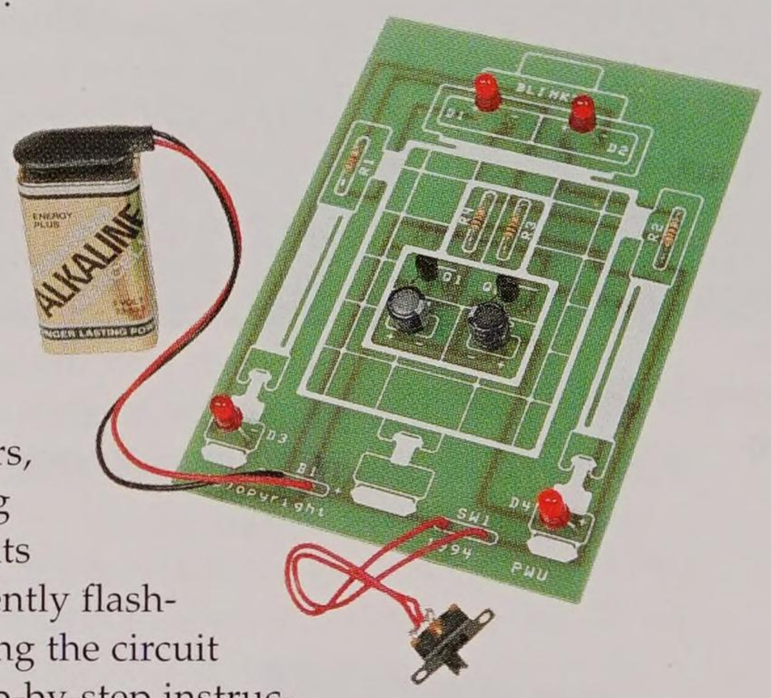
PITSCO SIMPLE CIRCUITS BOARD

Students learn the basics of simple series and parallel circuits with this hands-on activity board. Comes with a double-pole, double-throw switch, a DC motor, two lights, and a DC power supply (includes two C batteries).

Components are connected with screw/clamp-type connectors and included jumper wires.

Unit is approximately 12" x 15".

L754535—$119



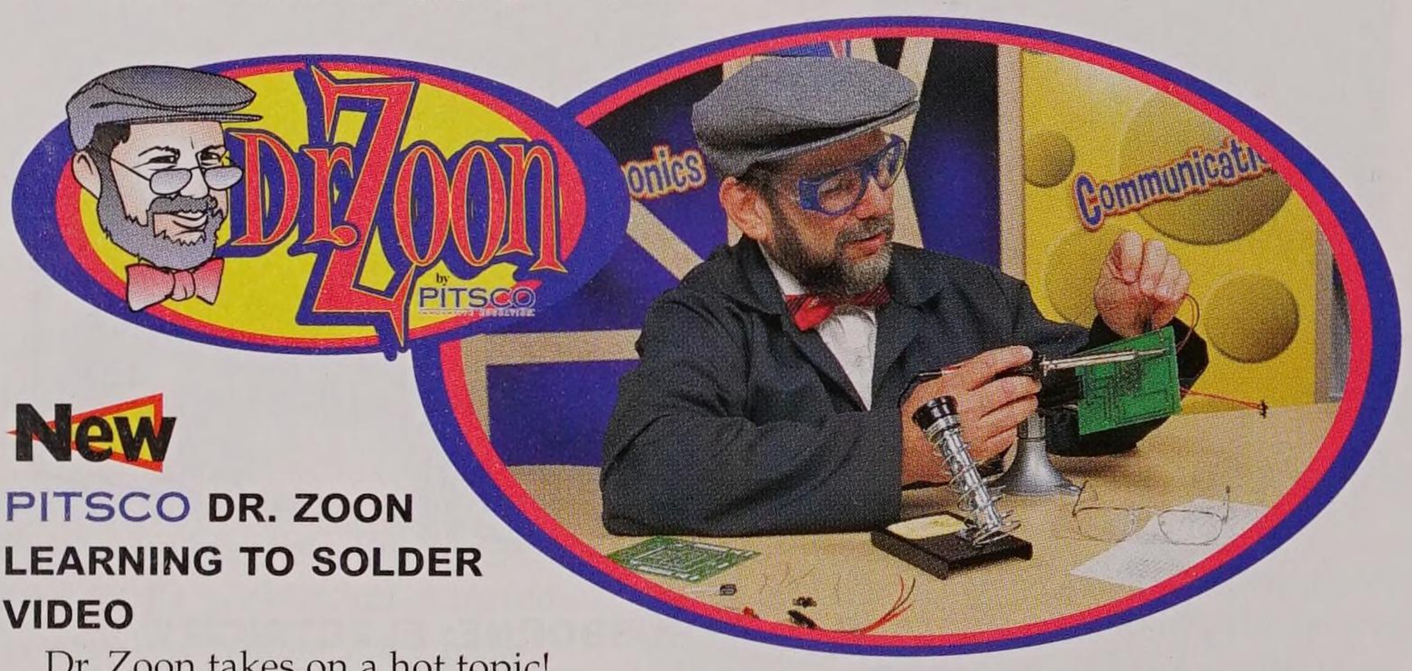
PITSCO BLINKY ROBOT KIT

Students place electronic components and learn soldering skills with this hands-on circuit board kit. By placing a variety of components – transistors, capacitors, LEDs, and resistors – and soldering them in a functional circuit, students build a robot board with intermittently flashing LEDs. All components, including the circuit board, are included along with step-by-step instructions. 9-volt battery sold separately.

L713294—$7.95

10 for $71.50

L751050 (9-volt battery, pkg of 1)—$3.95



New

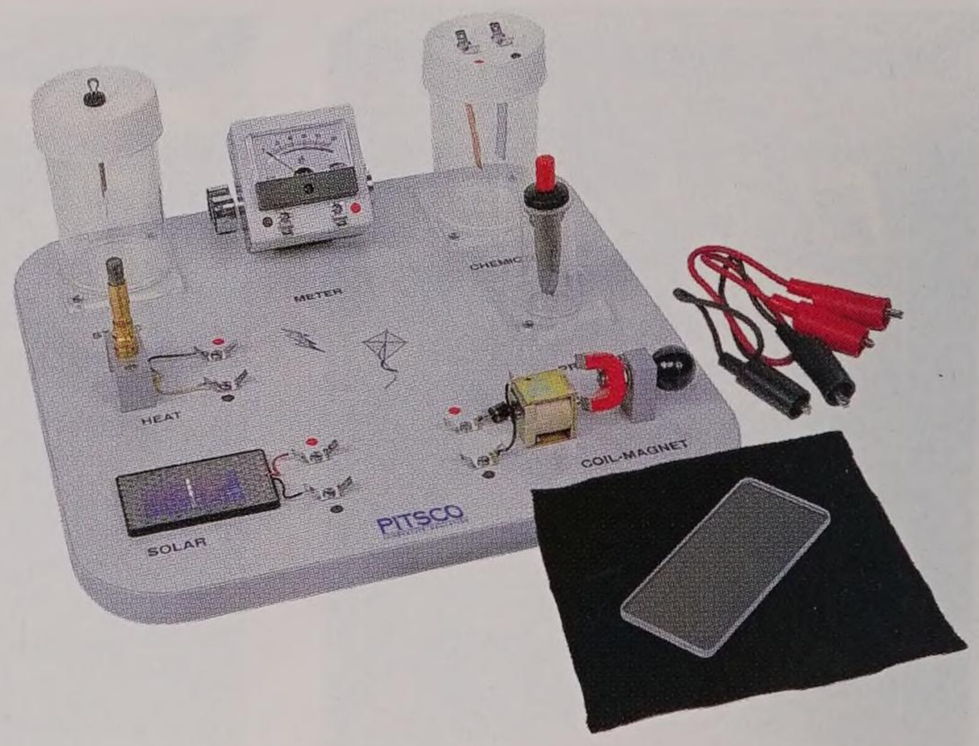
PITSCO DR. ZOON LEARNING TO SOLDER VIDEO

Dr. Zoon takes on a hot topic!

Use this video to introduce your students to soldering techniques for electronic circuits. Electronics is integrated into nearly every aspect of today's technology, and basic soldering skills are one of the first requirements of assembling many electronic circuits. In this video, Dr. Zoon demonstrates basic soldering skills by assembling the Pitsco *Blinky Robot Kit*. Time: 15 minutes.

Level: Middle School-High School

L757049—$24.95

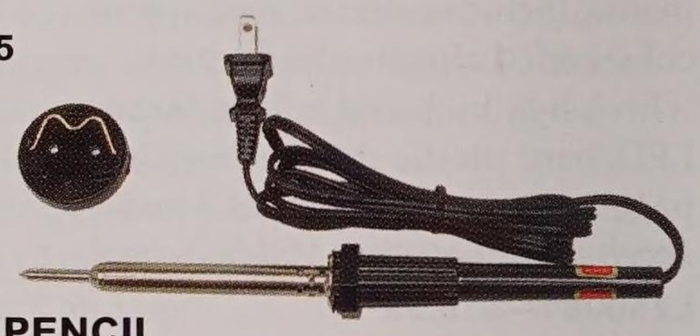


PITSCO WAYS TO MAKE ELECTRICITY DEMONSTRATOR

This innovative activity board demonstrates six ways that electricity can be produced – solar, heat, static, magnetic induction, pressure, and chemical. A built-in meter measures the current produced.

The six current-producing devices and meter are mounted on a 3/4" x 14" x 14" laminated board. Large spade terminals make it easy to connect the devices to the meter. Includes test leads with alligator clips and instructions.

L713267—$345



SOLDERING PENCIL

Compact, efficient, and featherweight. Stainless steel construction with a heat-resistant handle. Twenty-five-watt soldering iron heats up to 720°F. Narrow diameter gets into tight places. Replaceable nickel-plated tip for longer life. Includes convenient wire stand and instructions. UL approved. Includes a hot knife tip to cut through plastics.

L750112—$13.95

SOLDER

60/40 rosin core solder, .032 diameter, comes in 1/2-ounce tube dispenser.

L750787—$3.95

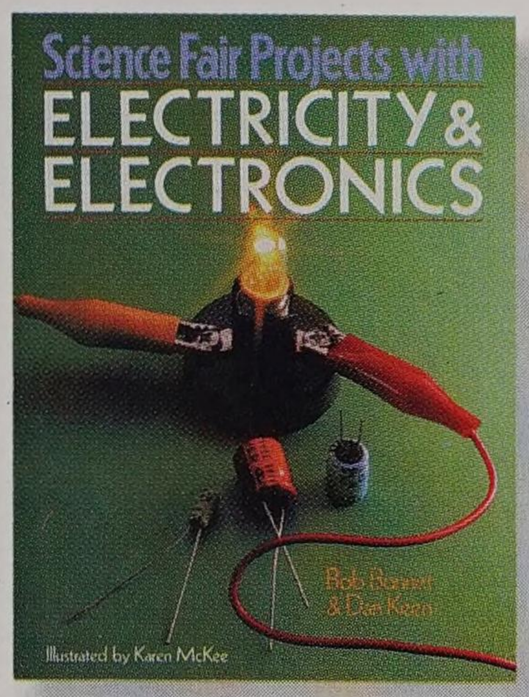
ELECTRONICS LAB KITS

Students work and learn their way through exciting, hands-on electronics experiments. They'll build great projects like burglar alarms and automatic night-lights. *Mr. Circuit Lab I* is an introductory-level kit, while *Mr. Circuit Lab II* is more advanced and delves into digital electronics. Kits contain excellent manuals, breadboards, and electronic components.

L750162 Mr. Circuit Electronic Lab I—$24.95

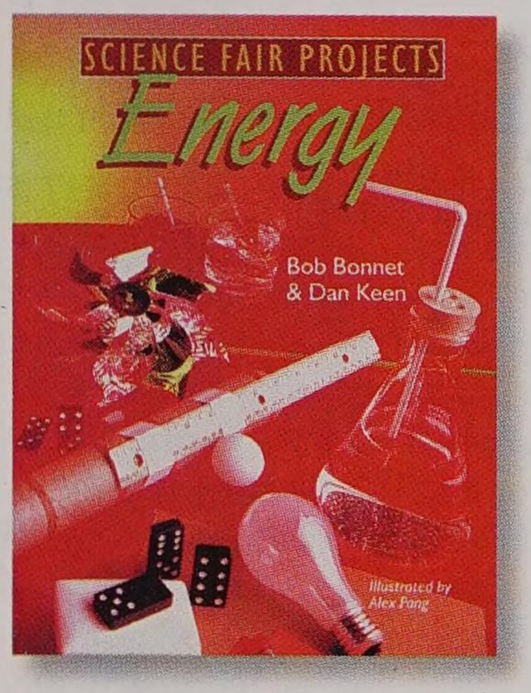
L751119 Mr. Circuit Electronic Lab II—$39.95

eLAB Energy, Work, Power 48-49
eLAB Renewable Energy 50-51
Ray Catcher 52-53
Pneumatics 56-57



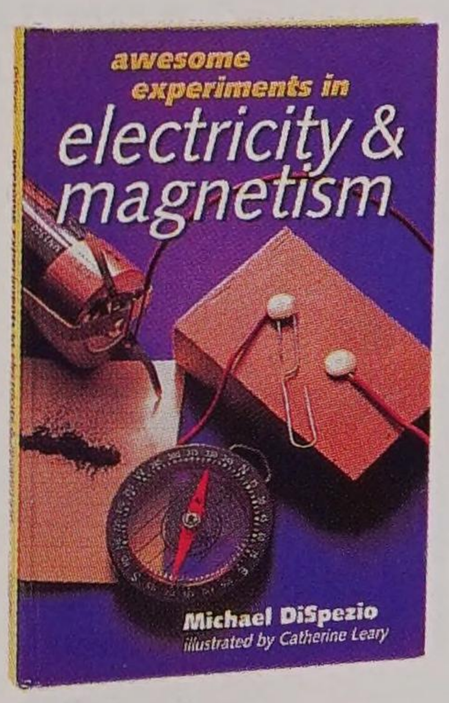
SCIENCE FAIR PROJECTS WITH ELECTRICITY & ELECTRONICS

Most good science students enjoy the excitement and experience of competing in science fairs. This book contains 40 fantastic projects that explore electromagnetic forces, static electricity, current flow, motors, resistance and capacitance, electricity generation, solid-state electronics, and frequency energy. This book features safety-minded projects that will impress classmates, parents, and science fair judges. "What If" questions follow each project. Paperback, 95 pages.
Level: Middle School
L756118—$9.95



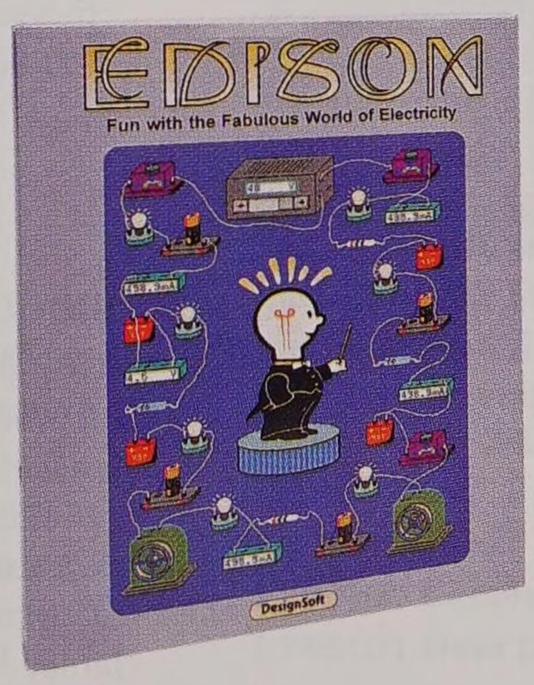
SCIENCE FAIR PROJECTS: ENERGY

What better place to look for a science fair project than in a demonstration of energy? Contained in this book are complete and simple illustrated instructions for more than 50 great experiments that deal with streams, storms, fossil fuels, how the body turns food into energy, and much more. The greatest form of energy is – student curiosity. This book will help satisfy some of it! Paperback, 95 pages.
Level: Middle School
L756119—$9.95



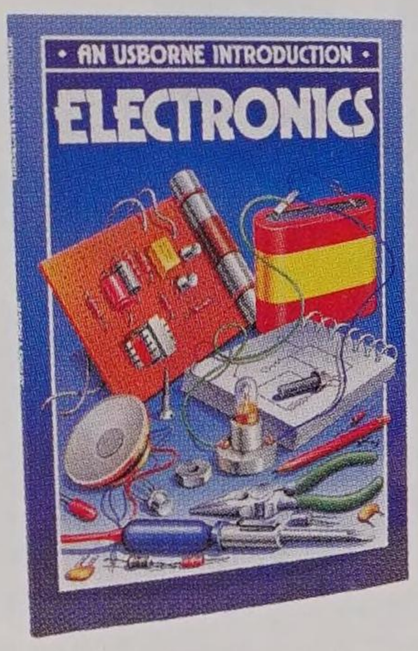
AWESOME EXPERIMENTS IN ELECTRICITY & MAGNETISM

More than 70 awesome activities covering static electricity, current electricity, and magnets and magnetism. All require simple, inexpensive, easily obtainable materials, and all are easy, fun, and exciting for kids to do. Each activity includes a list of materials, instructions on how to do the activity, and a short description of the science behind the experiment. Safety instructions are listed in bold. Great fun for the science classroom, and conforms to the National Science Education Standards. Paperback, 160 pages.
Level: Intermediate-Middle School
L757023—$7.95



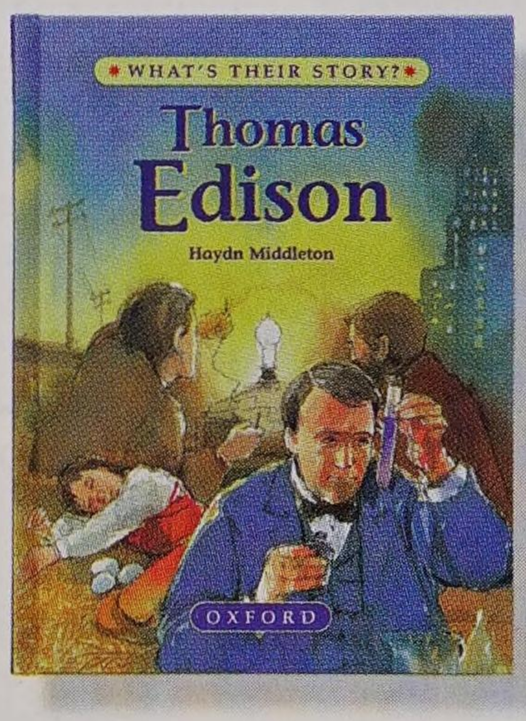
EDISON CD-ROM

Edison is the fun way to learn electricity and electronics! This unique software environment enables teachers and students to use multimedia screens, virtual instruments, and animation to create, test, and repair circuits. Build a circuit and watch it go to work immediately (if it's correctly constructed)! Try the many experiments and problems that come with the software, or create your own. *Edison* comes in three different versions of increasing complexity.
Level: Intermediate-High School
L753082 Edison DC Windows CD-ROM—$49
L756578 Edison AC/DC 2.0 Windows CD-ROM—$79
L756579 Edison Electronics 3.0 Windows CD-ROM—$129



USBORNE: ELECTRONICS

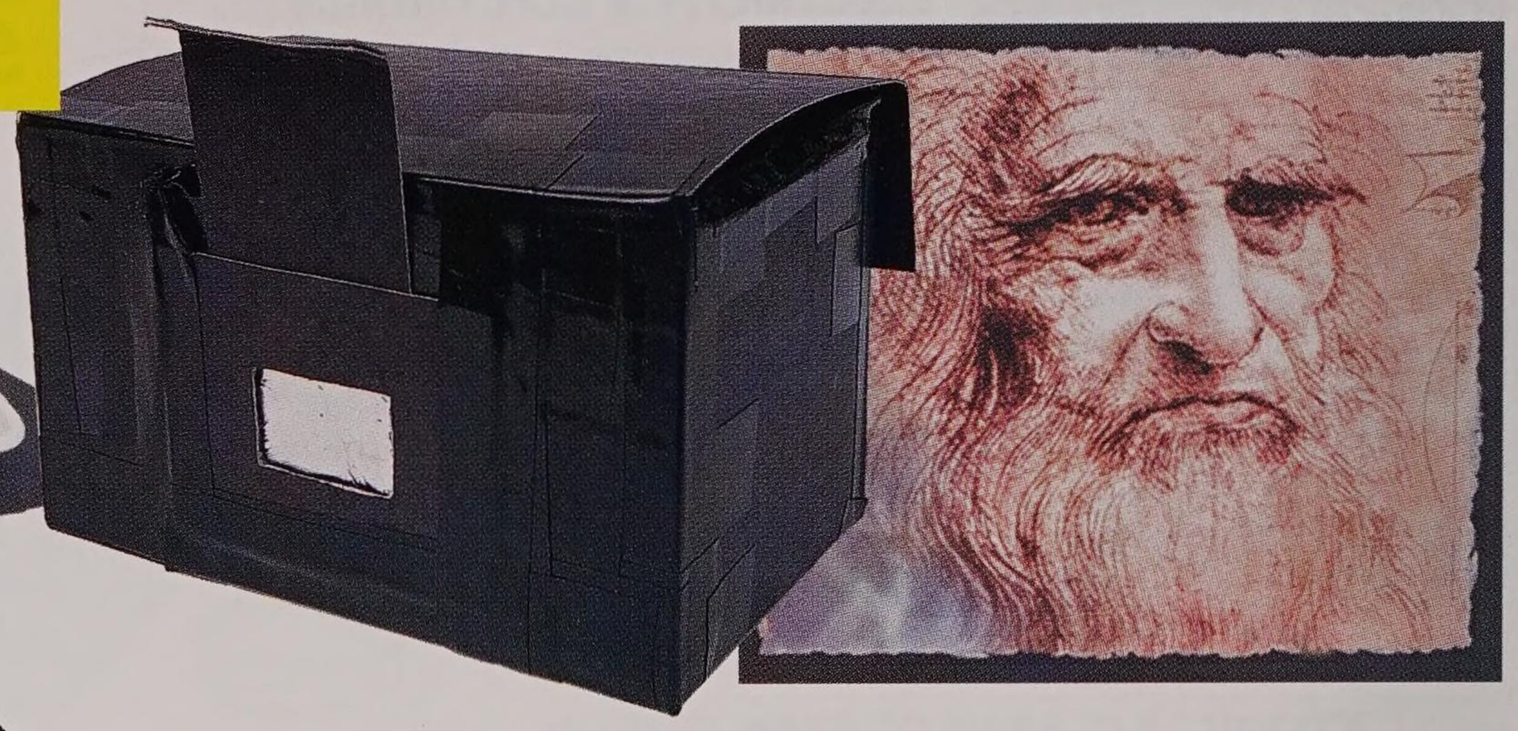
Lively step-by-step projects and colorful illustrations give the reader practical skills in understanding major principles of electronics. Many hints and tips are included to help beginners identify components, solder, read circuit diagrams, and test projects. Paperback, 35 pages.
Level: Middle School-High School.
L751089—$7.95
10 for $71.60



WHAT'S THEIR STORY? THOMAS EDISON

Here's an exciting, fully illustrated biography that will hold the attention of young readers. More than any other individual, Thomas Edison was responsible for introducing the modern age of electricity. Besides pioneering the first commercial electric light and power system, he also invented the phonograph, the microphone, and an early movie camera. This gripping story is one of determination, disappointment, and triumph. Hardback, 30 pages.
Level: Intermediate-Middle School
L756080—$15.55

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION



PITSCO DA CAMERA PAK

EXCLUSIVE

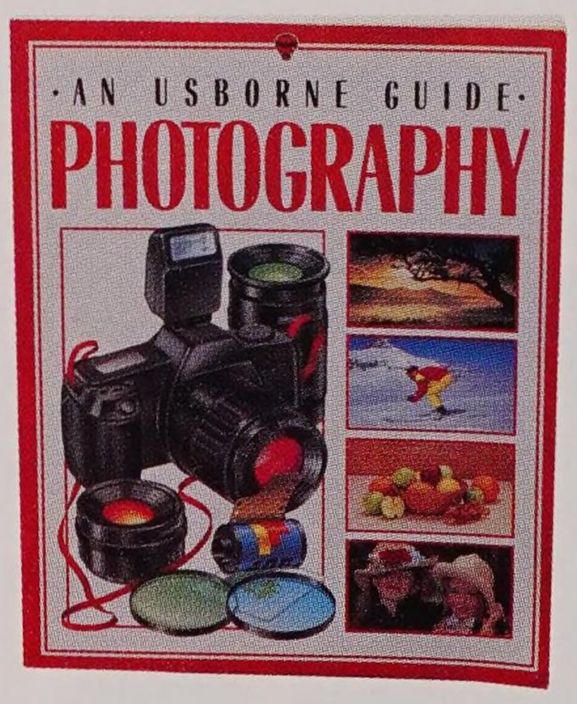
In the spirit of Leonardo da Vinci, students learn the basics of optics by using the camera obscura principle. Students construct simple cameras that mimic the way the human eye sees images. The cameras are then used to take pictures that the students develop. Cameras are constructed from black poster board and use 3-1/2" x 5" print paper. *Da Camera Pak* includes camera construction materials, print paper, darkroom safelight, developing containers, trays, funnels – everything needed for the activity.

L990012—$195

PITSCO DA CAMERA EXPENDABLES PAK

Contains construction materials, developing chemicals, print paper, and all other consumable items.

L990013—$129



USBORNE: PHOTOGRAPHY

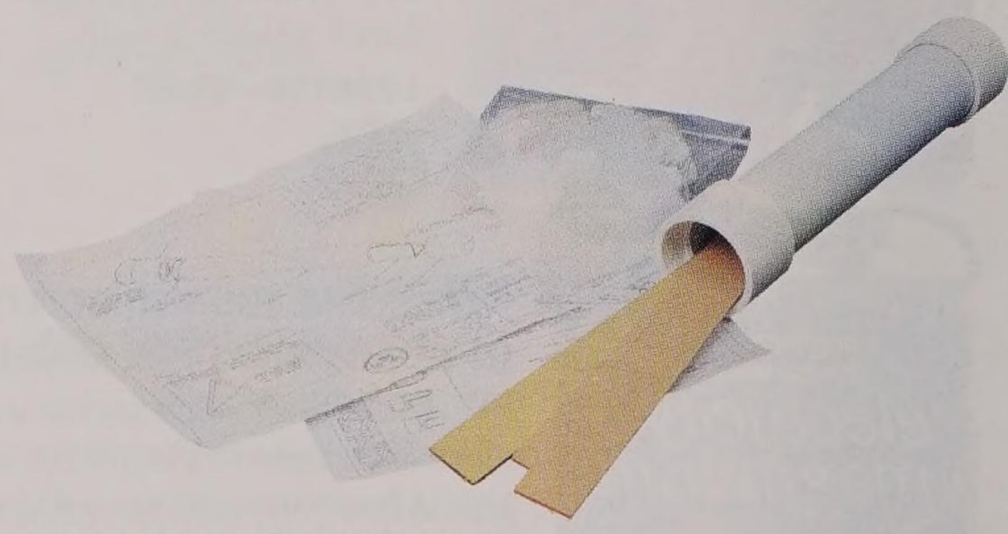
Packed with tips on the best way to take all kinds of photographs. There is also advice on how to avoid common mistakes and how to cope with difficult lighting conditions.

There are lots of examples of photos you can try, some of them using exciting special effects. Includes information on camera operation, print development, and display mounting. Paperback, 48 pages.

Level: Middle School-High School

L751597—$8.95

10 for $80.60

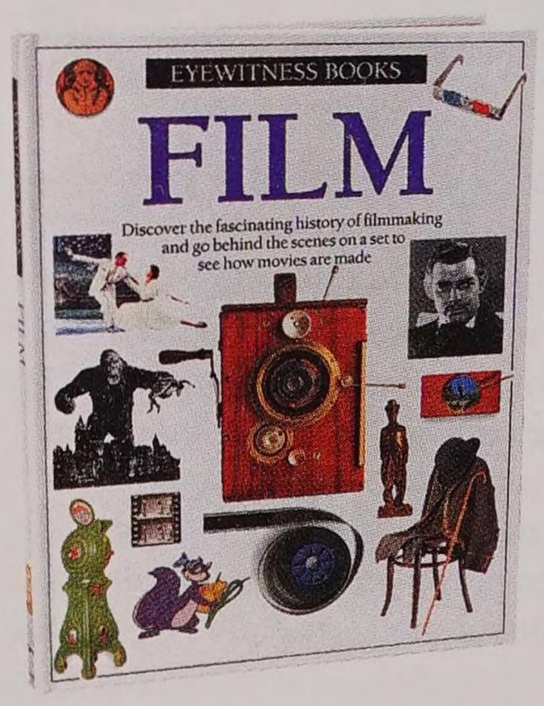


PITSCO KALEIDOSCOPE KIT

Students can build kaleidoscopes and experience dazzling illusions of their own making. Students place doodads (a very technical term for assorted colorful pieces) in the illusion chambers and observe the dynamic visual effects as they rotate the barrel of their kaleidoscopes. They can even reopen the illusion chambers and drop in their own objects of different colors and shapes.

Includes all the necessary parts: plastic tube, end pieces, mirrors, and a good supply of doodads.

L755050—$14.95

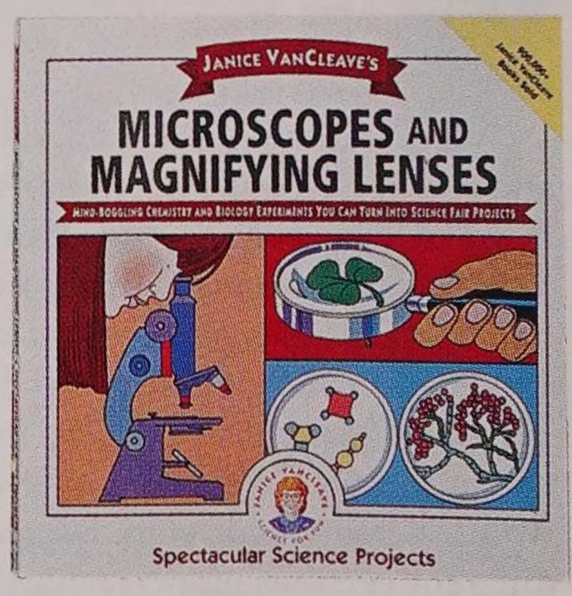


EYEWITNESS: FILM

The fascinating history of filmmaking comes alive through this book of photographic essays. It takes the student behind the scene to explore how a set is built, how stunts are performed, how special effects are achieved, how films are edited, and how movies are made. Hardback, 64 pages.

Level: Intermediate-Middle School

L752220—$19



MICROSCOPES AND MAGNIFYING LENSES

Janice VanCleave

Review this fantastic book from the prolific science author Janice VanCleave.

It is loaded with easy-to-do, hands-on experiments aimed at answering the most-asked questions about science. Paperback, 100 pages.

Level: Intermediate-Middle School

L715807—$10.95

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800-362-4308

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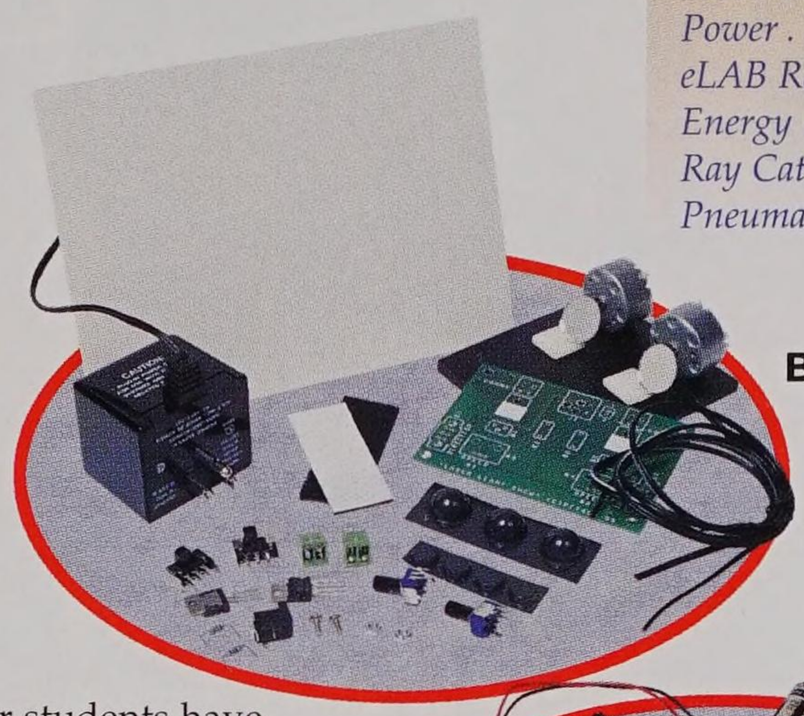
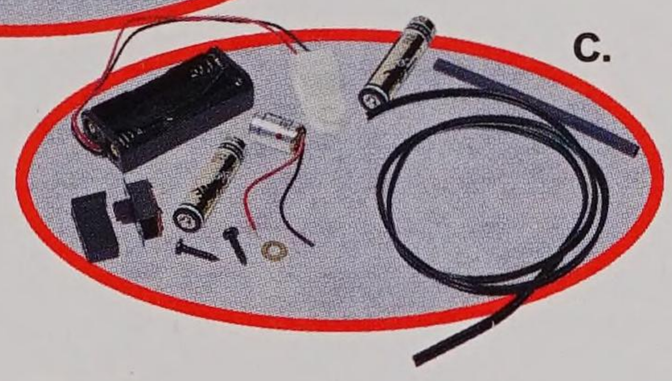




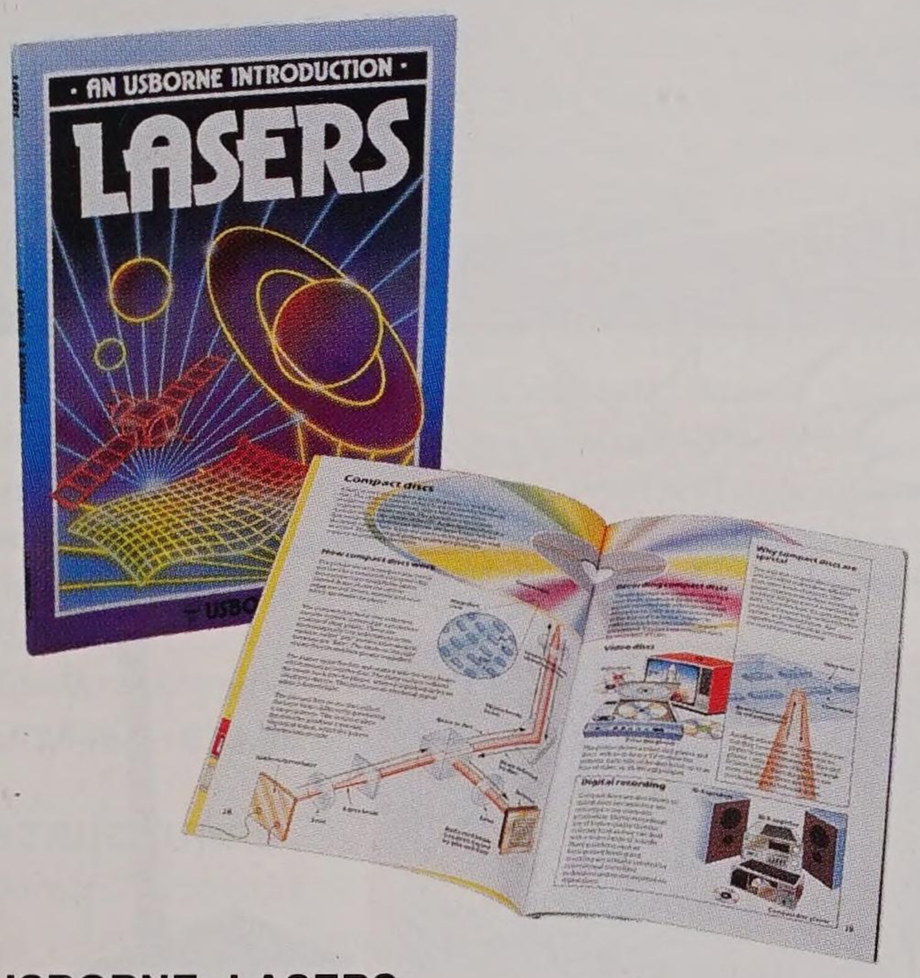
PITSCO LASER LIGHT SHOW SET

Dancing, swirling, pulsating laser light will captivate your students! Your students have probably seen a laser-light show at concerts, but now they can learn about lasers, basic circuitry, and soldering skills by building and experimenting with the Pitsco *Laser Light Show*.

By varying the speed and direction of two adjustable motorized mirrors, students can use a laser to project intricate patterns on the included viewing board or wall. The size of the projection can be changed by positioning the kit farther from the screen or wall. Longer distances (which means bigger images) can be obtained by using more powerful classroom-type lasers.

The kit includes everything needed – motors, round mirrors, circuit board, wiring, control switches, hook-and-loop fastener, batteries, and an AC adapter. The light show can be purchased with or without a laser, so you can use your existing classroom laser or a laser pointer.

L754149 A. Laser Light Show Set (with 4 mW laser)—$145
L715695 B. Laser Light Kit (without laser)—$75
L715694 C. Laser Diode Module (4 mW output)—$95



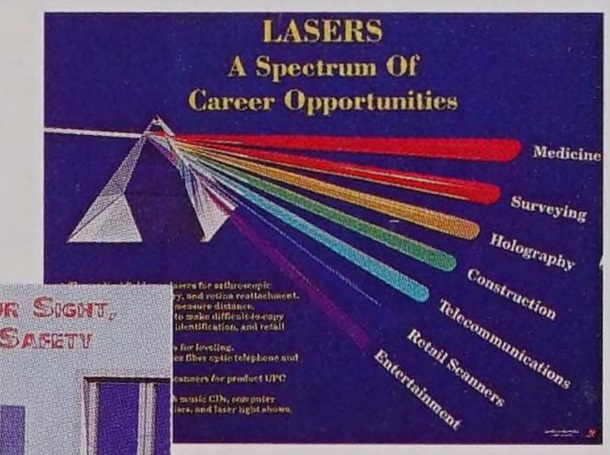
USBORNE: LASERS

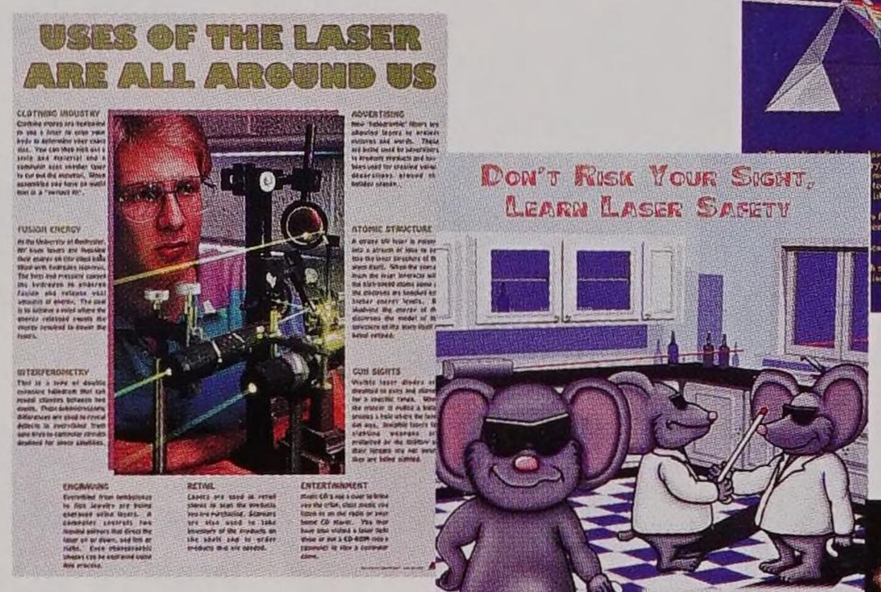
An excellent Usborne introductory reference on one of the most fascinating, versatile facets of the new technology. Lasers now cut metal, cure diseases, project 3-D images, transmit information, store data, play hi-fi music, and are an integral part of many weapon systems.

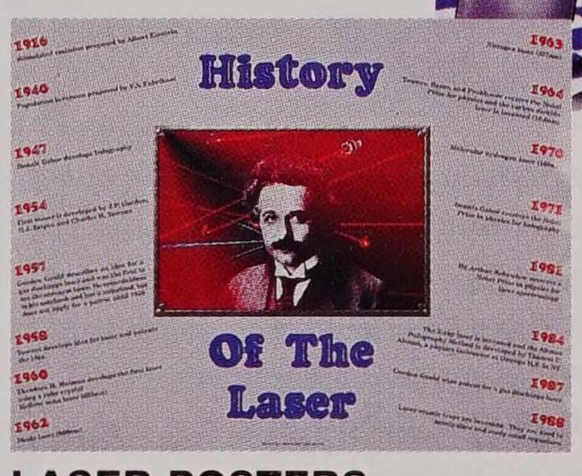
This book explores these ideas and others in clear language and color illustrations. Paperback, 48 pages.

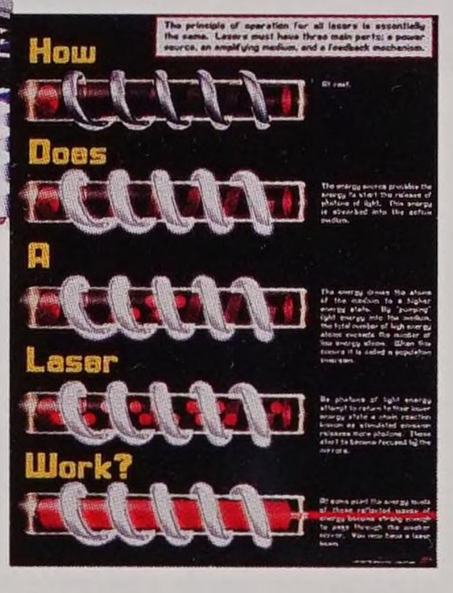
Level: Middle School-High School

L750954—$7.95
10 for $71.60









LASER POSTERS

Laser is quickly becoming a common word in today's classroom. Pitsco offers you five great posters: "Uses of the Laser Are All Around Us," "Don't Risk Your Sight, Learn Laser Safety," "History Of The Laser," "How Does A Laser Work?," and "LASERS: A Spectrum Of Career Opportunities." Not laminated. Size: 17" x 22".

L756100 Lasers: A Spectrum Of Career Opportunities
L756101 How Does A Laser Work?
L756102 Don't Risk Your Sight, Learn Laser Safety
L756103 Uses Of The Laser Are All Around Us
L756104 History Of The Laser
Individual Posters—$5.95
L756105 Complete Set—$24.95

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

64 LEGO Structures

LEGO Technic

STRUCTURES SET #979618

EXCLUSIVE

461 elements

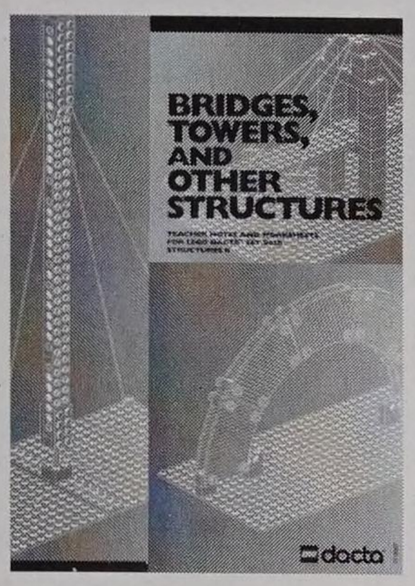
This great set expands upon the experiences of the *Primary Towers & Bridges Set* and provides a more in-depth exploration of structures. Students will discover many structure concepts including stability within bridges and towers, forces on structures, and strength of materials.

They discover these concepts by designing and building structures from various materials, such as corrugated plastic sheets, studded string, and wooden sticks. Because the materials are low-cost, the models can be destructively tested. Includes:

- Instructions for 20 models
- Force meter – a clever device that students build from LEGO elements. It measures the force placed on a structure.

L979618—$74.50

FreeFax™ Orders!
888-534-6784



EXCLUSIVE

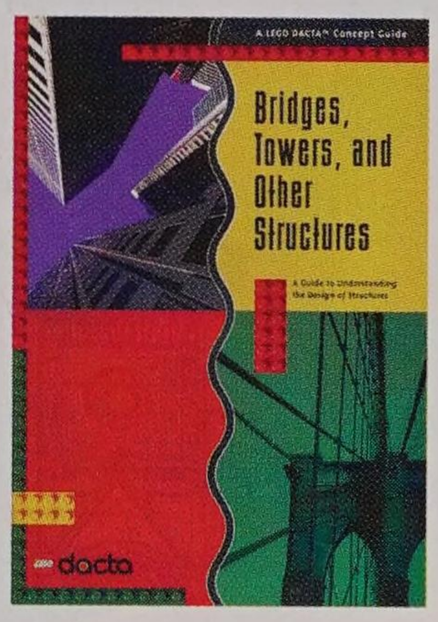
STRUCTURES ACTIVITY PACK #909618

The activity pack contains all the information needed by teachers to orchestrate a successful unit with the *Structures Set*. There are 13 copy master worksheets with teacher notes, background information, templates, and one copy of the *Concept Guide: Bridges, Towers, and Other Structures*.

The materials are designed for classroom activities – from exploring and investigating structure concepts to their application in problem-solving activities.
Teacher's Resource

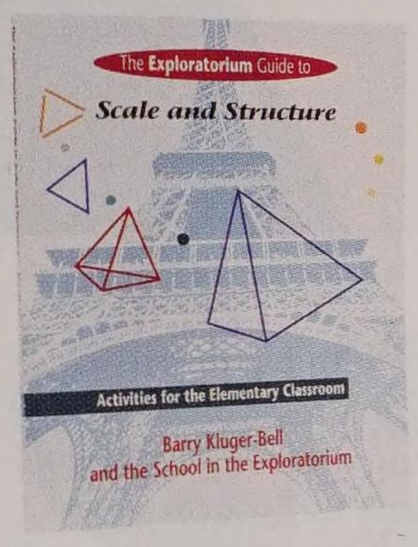
L909618—$25

CONCEPT GUIDE: BRIDGES, TOWERS, AND OTHER STRUCTURES #200039



This excellent guide is a great way to introduce students to the basic concepts of structural design. It takes a fascinating look at bridges, towers, skyscrapers, dams, ancient buildings, and even structural elements of nature. Use with the *Structures Set #979618*. Paperback, 23 pages.
Level: Middle School-High School

L200039—$17.50

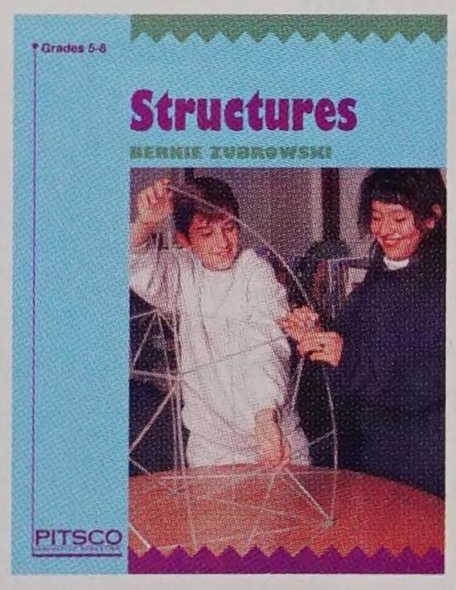


THE EXPLORATORIUM GUIDE TO SCALE AND STRUCTURE

This teacher's resource book is full of structural engineering activities and is great for introducing students to structures. Fun, practical activities teach aspiring engineers about structures and scale. Projects include building with straws, clay, and toothpicks; building paper bridges; building domes; and load testing structures. Filled with helpful illustrations and photos of kids doing the activities. Includes teacher tips, discussion points, and extension options. Paperback, 198 pages.
Teacher's Resource

L754466—$39.95

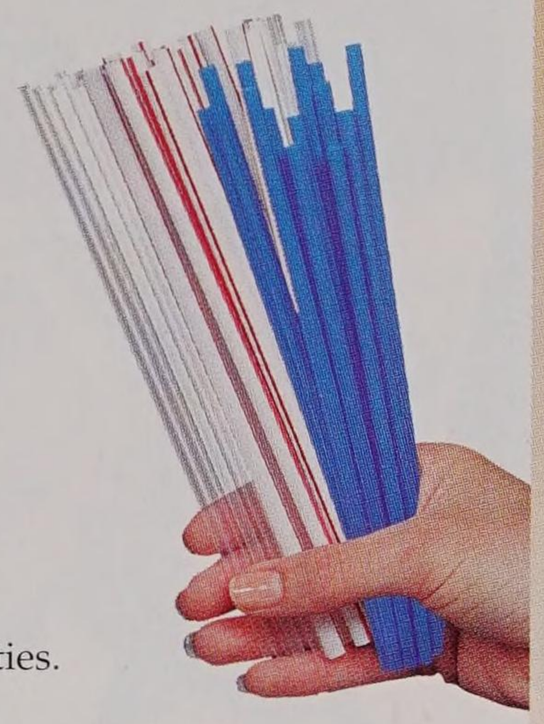
STRUCTURES



Bernie Zubrowski

Activities in *Structures* present opportunities for learning fundamental scientific concepts and skills. Students use straws for the three basic projects of building model houses, bridges, and towers. They must isolate the essential members of a structure and analyze how these members interact with one another. Paperback, 64 pages.
Level: Intermediate-Middle School

L757762—$11.50



- *LEGO Structures . 64-65*
- *Early Structures Set 66-67*
- *BridgePak 70-71*
- *Structure Tester 72*
- *TowerPak 72*

PLASTIC STRAWS FOR STRUCTURES

Use for bridge- and structure-building activities. 7-3/4" in length.

L715909 Clear, 1/4" dia (500 qty)—$4
L715910 White/red stripe, 1/4" dia (500 qty)—$4
L753334 Plastic straws, 1/8" dia (500 qty)—$4
L756856 Long straws, 1/4" dia (500 qty)—$5
L756820 Neon blue straws, 1/4" dia (250 qty)—$4

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

New

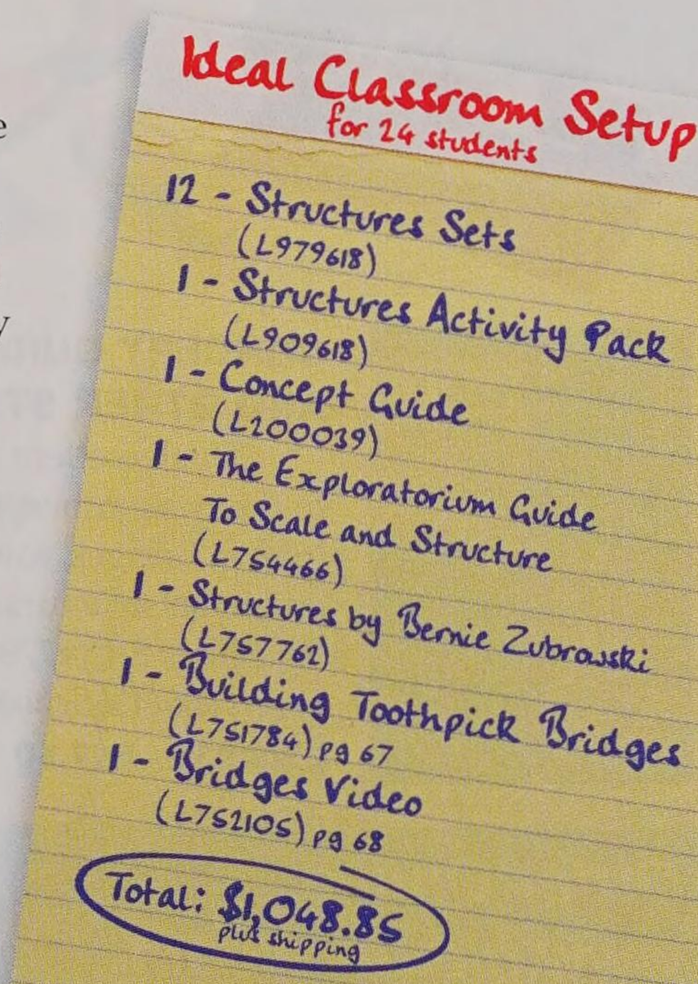
PITSCO DR. ZOON STRAW STRUCTURES VIDEO

Straws are not just for sipping – at least not when Dr. Zoon is around!

Join Dr. Zoon as he explains some basic principles of how structures work. To illustrate these principles, he uses straws and pipe cleaners to build a variety of structures, including many geometric solids.

Along with the demonstrations, he shows students how to build their own straw structures – a hands-on activity that will become a must for science and technology classrooms! Time: 20 minutes.
Level: Intermediate-Middle School

L757050—$24.95



PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

66 Early Structures Set

EARLY STRUCTURES SET #779660

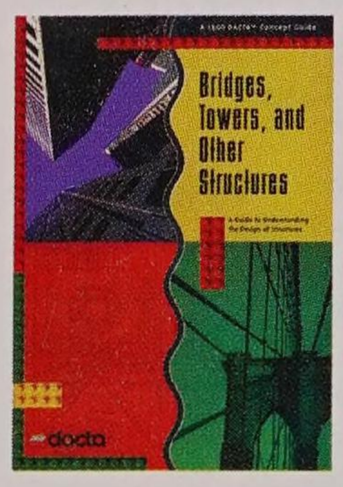
107 DUPLO elements

Students learn basic structure concepts with hands-on exploration! Concepts include balance within structures, ways of building structures, and stability. By building a variety of models children can determine what is the best shape for the job. It's ideal for developing design and problem-solving skills. The set is designed for use by teams of two to three children. In addition to the elements, it includes:

- Teacher's notes with support for 16 activities
- 12 investigation cards for 12 models
- 2 problem-solving cards
- Inventory card

(Storage case not included.)

L779660—$73.75



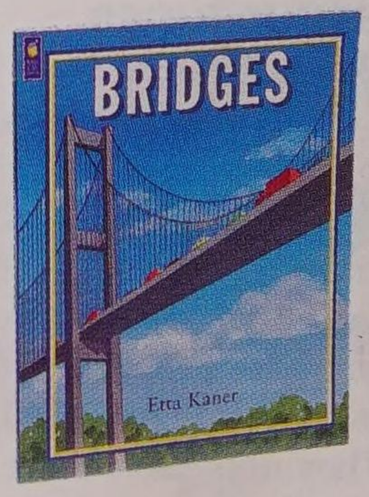
CONCEPT GUIDE: BRIDGES, TOWERS, AND OTHER STRUCTURES #200039

This excellent guide is a great way to introduce students to the basic concepts of structural design. It takes a fascinating look at bridges, towers, skyscrapers, dams, ancient buildings, and even structural elements of nature. Use with the *Early Structures Set* (#779660). Paperback, 23 pages.

Level: Middle School-High School

L200039—$17.50

BRIDGES

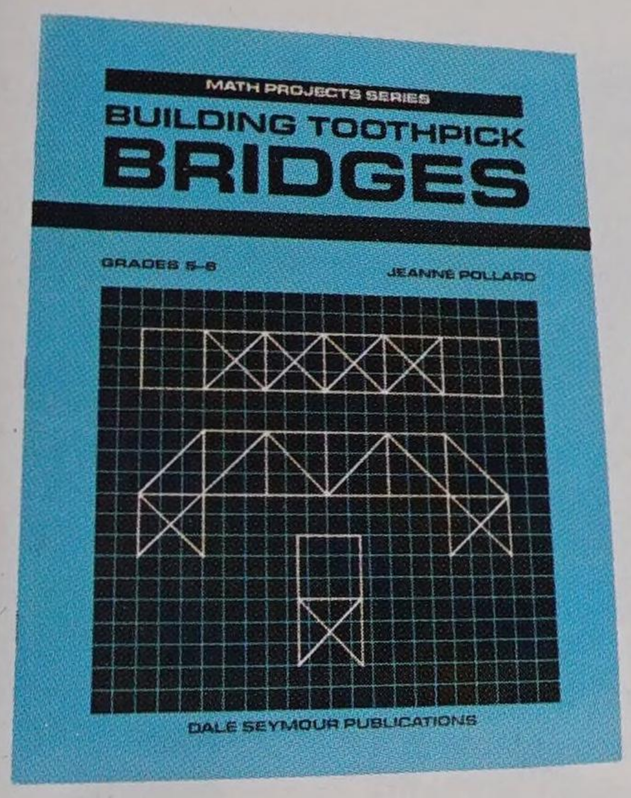


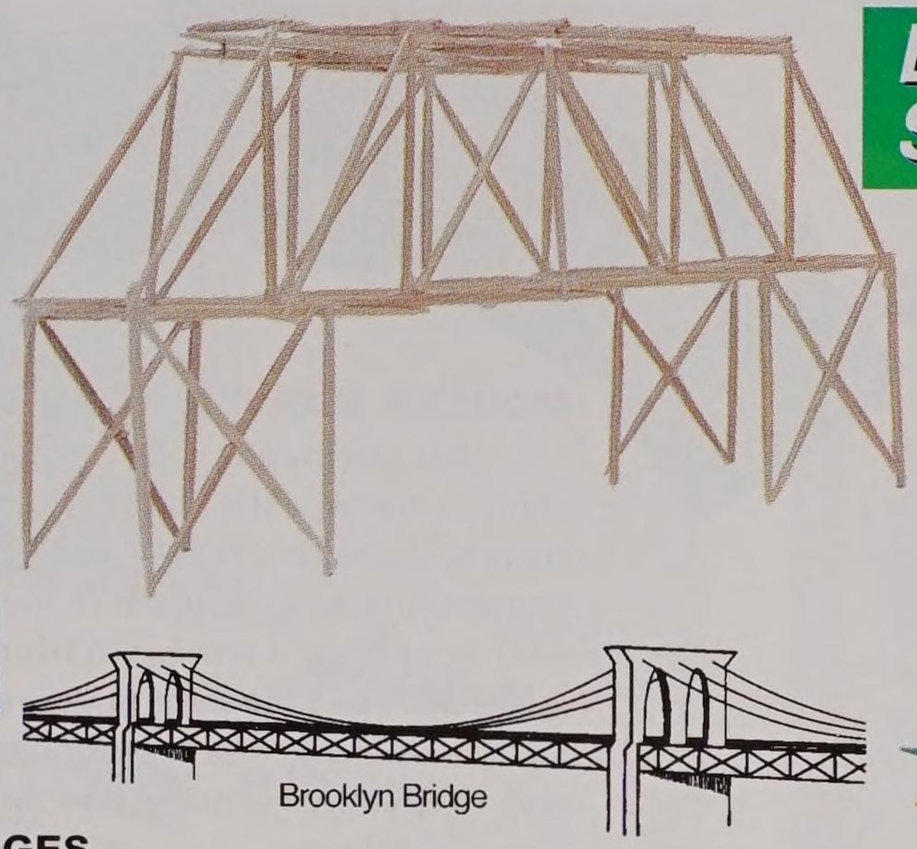
Budding engineers first read a brief description of a type of bridge – beam, arch, suspension, or movable – and then follow the simple instructions to build their own bridges, using simple materials such as paper and tape. Questions lead them in the discovery of basic engineering principles. Paperback, 48 pages.

Level: Intermediate

L990218—$9.95

Order Online!
www.pldstore.com





LEGO Structures . 64-65
• Early Structures Set 66-67
BridgePak 70-71
Structure Tester 72
TowerPak 72

STANDARDS

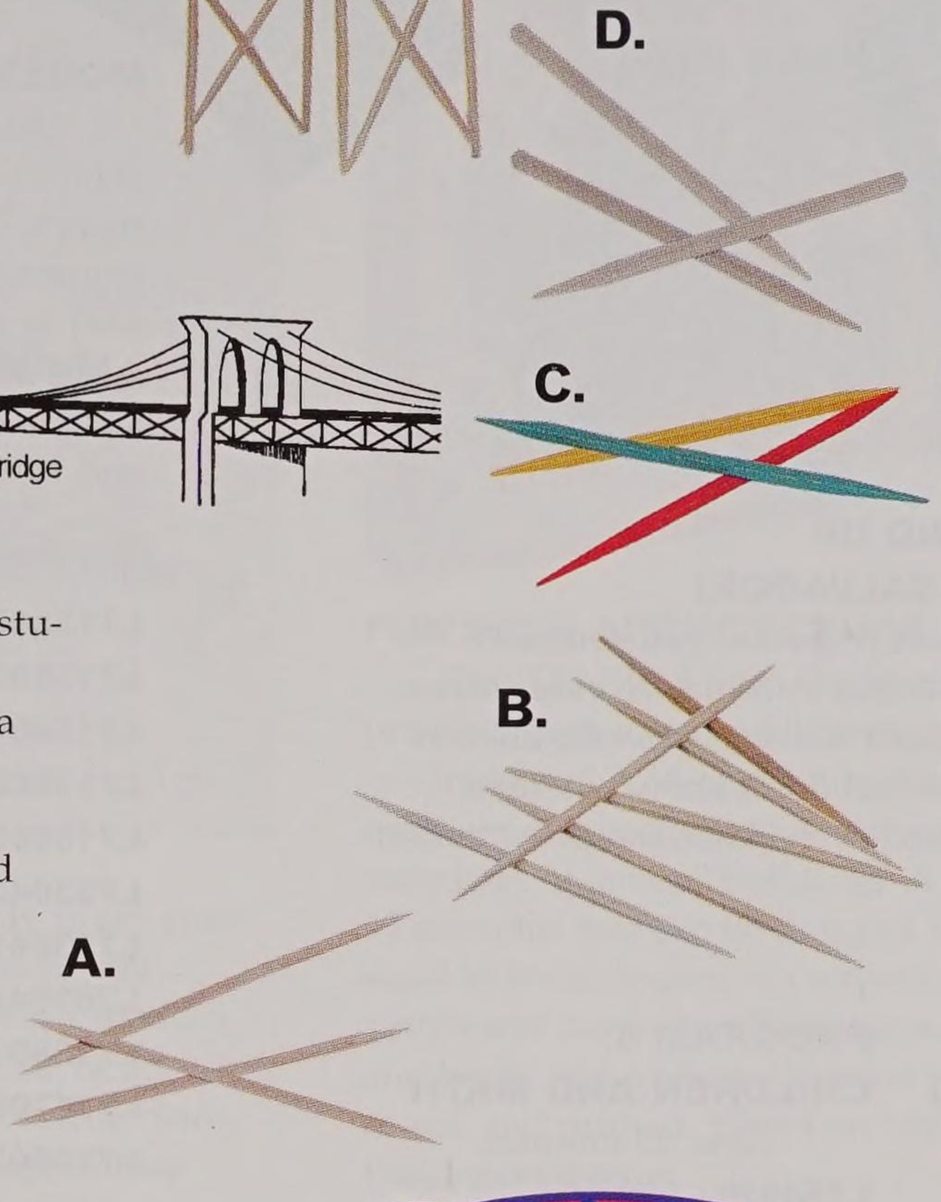
These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

BUILDING TOOTHPICK BRIDGES

Link your math curriculum to the world around you with the motivational ideas in this book. A "company" of students builds a bridge with an architect, project managers, bookkeepers, a budget, and materials. The book provides a practical approach to math, geometry, and social studies through the experience of bridge construction.

For the teacher, the book contains clear guidelines and plans for this valuable unit. Paperback, 30 pages.
Level: Intermediate-Middle School

L751784 Building Toothpick Bridges Book—$10.95
L751741 A. Round Toothpicks (pkg of 800)—$1.50
L751742 B. Square Toothpicks (pkg of 800)—$1.95
L756855 C. Colored Toothpicks (pkg of 250)—$1.95
L756854 D. Sandwich Picks (tube of 200)—$3.95



Professional staff development available in most states. Call for details. 1-800-362-4308

New

PITSCO DR. ZOON TOOTHPICK BRIDGES VIDEO

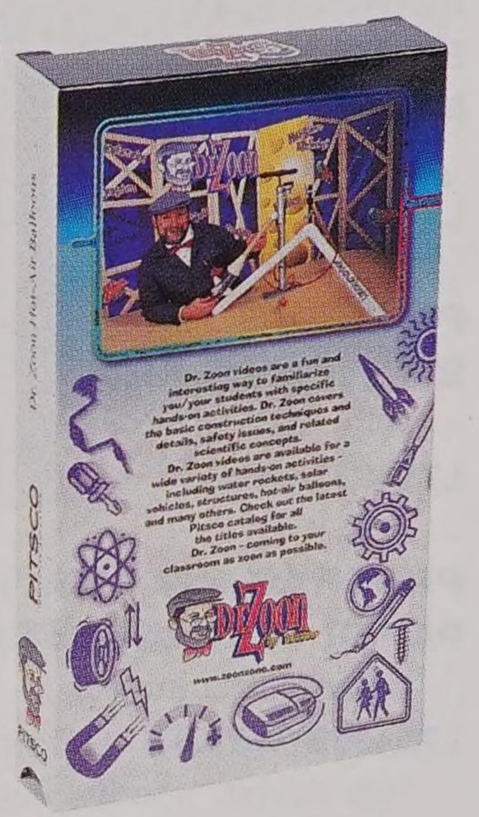
Since the dentist said to floss more often, Dr. Zoon has had to find some use for all those toothpicks!

This simple, yet challenging activity is a favorite among many teachers. Let Dr. Zoon provide a few ideas and step-by-step instructions to ensure success for students.

When asked about the strength of toothpicks, Dr. Zoon replied, "We'll cross that bridge when we get to it." Time: 20 minutes.

Level: Intermediate-Middle School

L757233—$24.95



BLUNT END STRUCTURE STICKS

Try these structure sticks instead of toothpicks. Blunt ends make them safer and allow for more precise joints and stronger structures! The square sticks are 2-5/8" in length.

L754459 (500 per pkg)—$1.85

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

Ideal Classroom Setup
for 24 students

6 - Early Structures Sets (L779660)
1 - Bridges Book (L990218)
1 - Concept Guide: Bridges, Towers, and Other Structures (L200039)

Total: $469.95 plus shipping

WHY BUILDINGS STAND UP VIDEOS WITH MARIO SALVADORI

One of the world's most respected authorities on structural engineering hosts this informative video series. The videos are a great resource for teachers who are considering teaching structures but don't know where to begin. Ideas for activities and even classroom presentation are covered at length.

Teacher's Resource

PROGRAM 1: LOADS ON BUILDINGS
Time: 27 minutes.
L754925—$29.95

PROGRAM 2: EQUILIBRIUM AND MATERIALS
Time: 27 minutes.
L754926—$29.95

PROGRAM 3: BRIDGES
Time: 26 minutes.
L754927—$29.95

PROGRAM 4: PAPER STRUCTURES
Time: 21 minutes.
L754928—$29.95

PROGRAM 5: CHILDREN AND MATH
Time: 25 minutes.
L754929—$29.95

PROGRAM 6: HISTORY OF ARCHITECTURE ENGINEERING
Time: 30 minutes.
L754930—$29.95

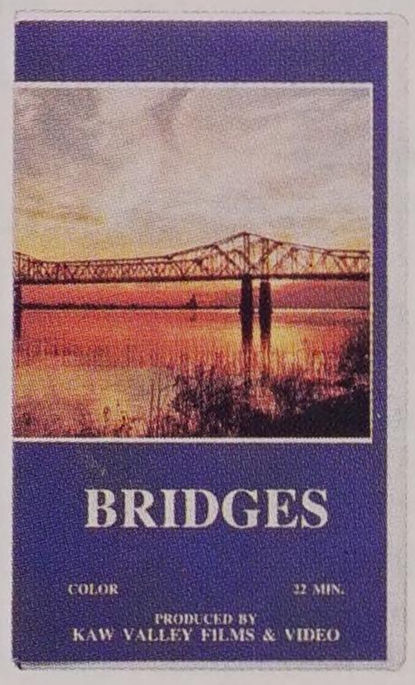
PROGRAM 7: SWING BRIDGES
Time: 13 minutes.
L754931—$29.95

PROGRAM 8: SKYSCRAPERS
Time: 15 minutes.
L754932—$29.95

MODERN MARVEL VIDEO SERIES

This fascinating video series examines some of the world's most impressive landmarks. These structures represent the greatest engineering achievements of the 20th century as well as a nation's resolve to triumph over adversity. See how their builders overcame unique challenges using problem-solving skills and imaginative construction methods.
Time: 50 minutes.
Level: Middle School-High School

L715800 The Statue of Liberty—$22
L715802 The Transcontinental Railroad—$22
L715804 Gothic Cathedrals—$22
L715806 Tunnels—$22
L715805 Domed Stadiums—$22
L753042 Empire State Building—$22
L753041 Grand Coulee Dam—$22
L753043 Mount Rushmore—$22
L715801 Panama Canal—$22
L715799 The Eiffel Tower—$22
L715803 Ocean Liners—$22



BRIDGES VIDEO

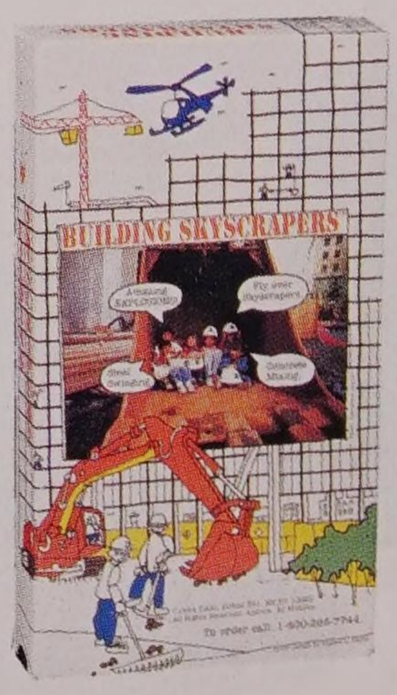
A stimulating way to introduce students to a bridge-building unit! *Bridges* starts in the beginning – when nature provided our first bridges: logs, rocks, hanging vines – and chronicles the progression of bridge technology – wood, stone, iron, steel, and reinforced concrete.

Bridges also explores the various uses of bridges, as well as the four basic bridge designs: beam, arch, suspension, and pontoon. It includes famous bridges and features exciting footage of the spectacular collapse of the Tacoma Narrows Bridge. Time: 22 minutes.
Level: Middle School-High School
L752105—$49.95

BUILDING SKYSCRAPERS VIDEO

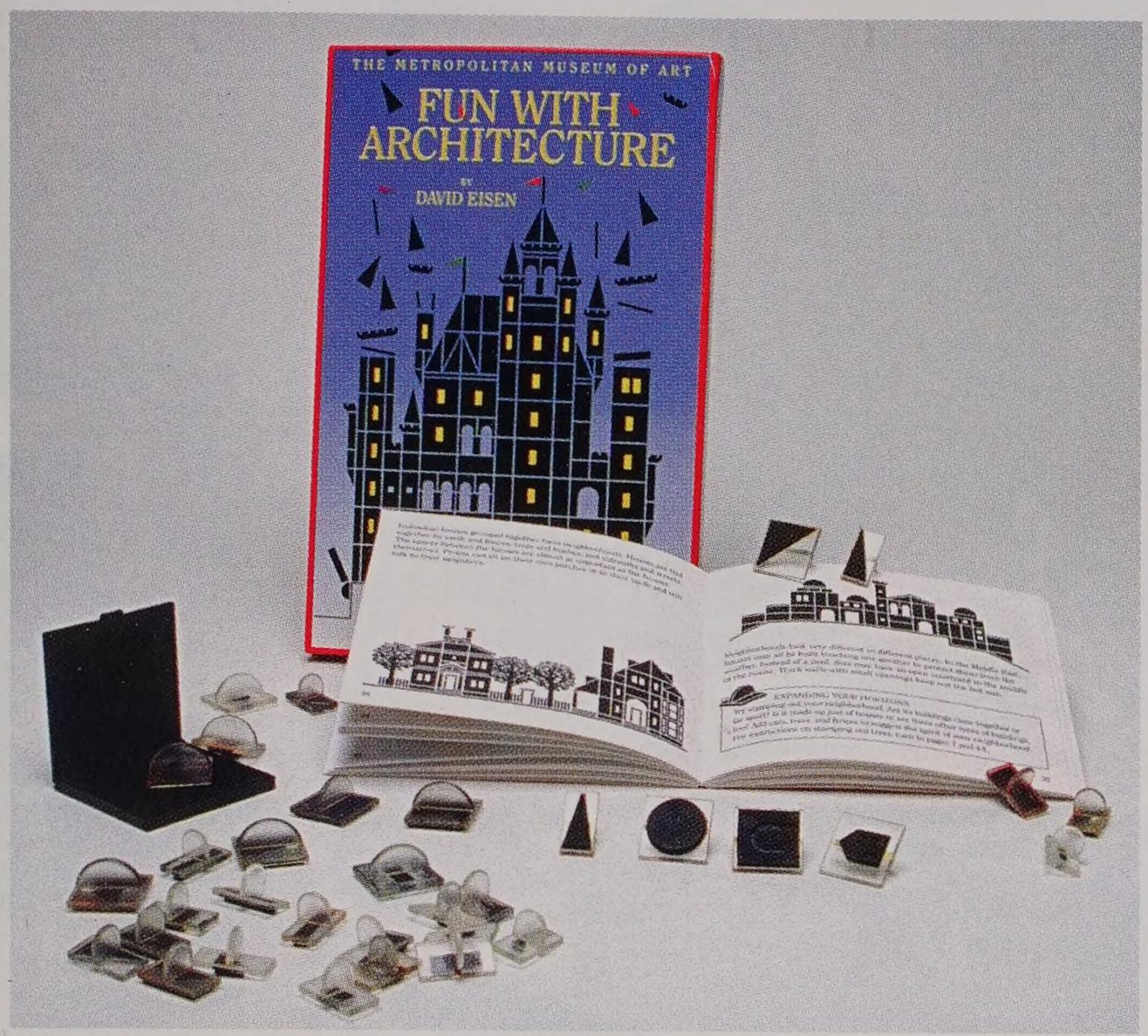
This video shows kids the fascinating nuts and bolts of how skyscrapers are made. Its kid-friendly "How do they do that?" format is designed to inspire creativity.

Students will be thrilled with exciting footage of amazing explosions, swinging steel, mixing concrete, and breath-taking skyscraper flyovers. Kids will appreciate what it takes to create skyscrapers – true wonders of the modern world. Time: 40 minutes.
Level: Intermediate-Middle School
L753020—$22



Call Toll Free!
800-362-4308

LEGO Structures . 64-65
Early Structures Set 66-67
BridgePak 70-71
Structure Tester 72
TowerPak 72



FUN WITH ARCHITECTURE

Here's an unconventional (not to mention brilliant) way to get your students interested in architecture and design. This set of 35 rubber stamps lets students stamp out fantastic structures, including a modern suspension bridge, Rome's Pantheon, a simple country house, or an entire cityscape. While doing so, they learn the elements of architecture.

Includes a guidebook, written by an architect and a teacher, that introduces basic architectural principles and styles from the ancient world to the present day. Readers can recreate the book's many illustrations or create their own designs. Packaged in a sturdy storage case with magnetic closure, it also contains an ink stamp pad and an "Elements of Architecture" chart.

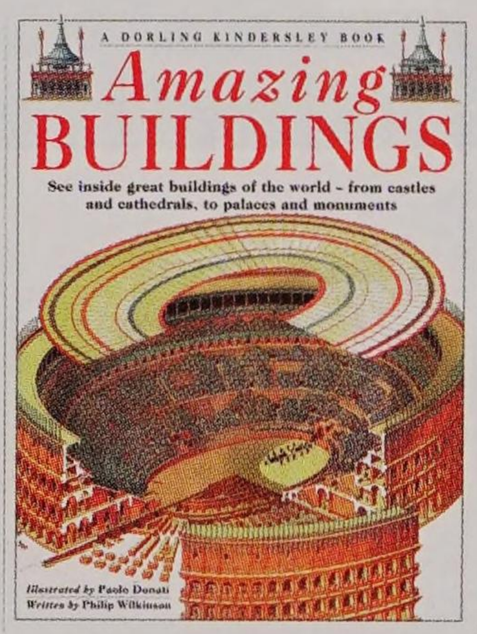
L752796—$22.50

AMAZING BUILDINGS

Amazing Buildings is an introduction to the fascinating world of architecture. The large-scale artwork, with sections cut away and roofs lifted off, allows students to step inside more than 20 of the world's finest ancient and modern buildings. Hardback, 48 pages.

Level: Middle School

L752117—$16.95



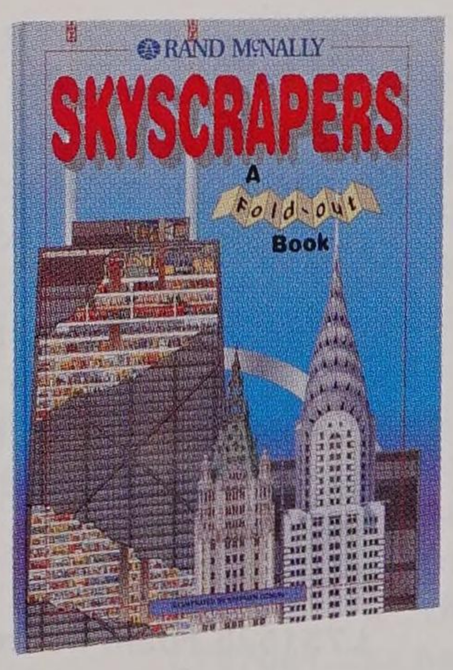
SKYSCRAPERS: A FOLD-OUT BOOK

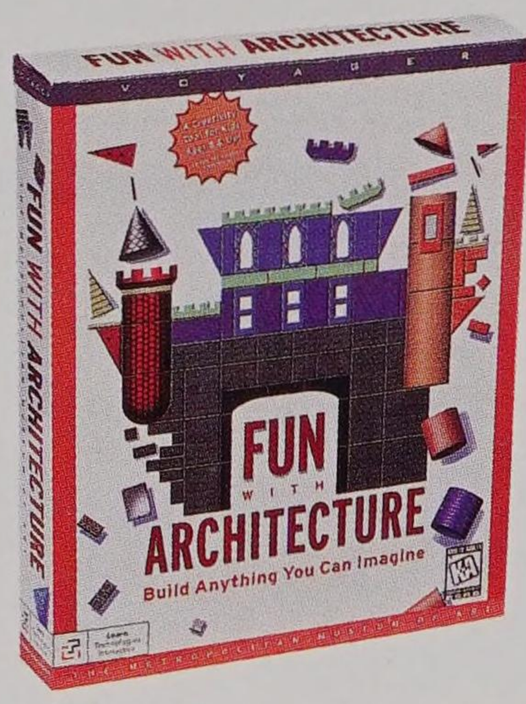
Skyscrapers unfolds to reveal two towering illustrations that tell the story of the world's tallest structures! On one side of the book you can peer into an amazing cutaway of Chicago's Hancock Center. From its foundation of caissons 15 stories below ground to its twin TV and radio antennas 1,127 feet above ground, it's all exposed in breathtaking, true-to-scale detail.

A second illustration sizes up the world's tallest structures, from the Ulm Cathedral to the CN Tower in Toronto. All buildings are drawn to scale for your comparison. Bound in a protective hard cover. Foldout size is 65-1/2".

Level: Middle School-Adult

L754922—$14.95



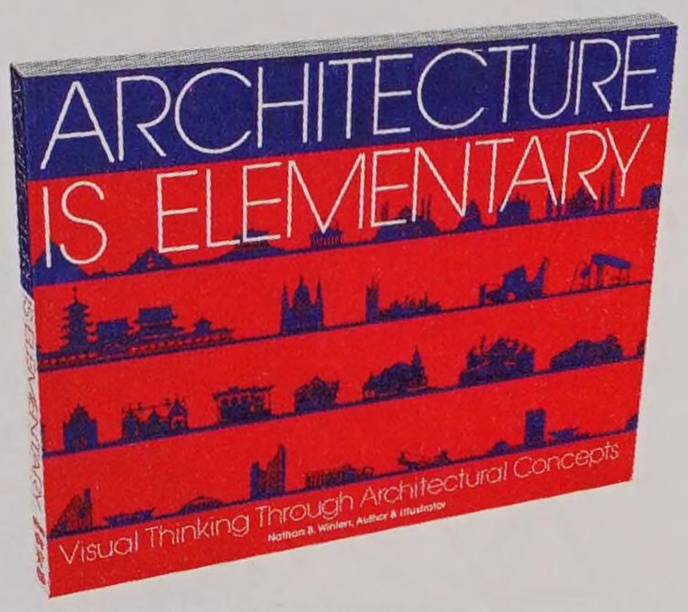


FUN WITH ARCHITECTURE CD-ROM

This CD-ROM from the Metropolitan Museum of Art provides both tools and information to build "anything you can imagine." A 66-page, on-screen book teaches the rudiments of architecture, illustrated with many diagrams and templates of famous buildings. A building screen provides 45 elements that can be dragged into place, rotated, and sized to build houses, skyscrapers, even towns. Fun landscapes and more than 20 textures, including wood, stone, and brick, add realism. Finished projects can be colored, saved, and printed. Works on both Macintosh and Windows systems.

Level: Intermediate-Adult

L756934—$32.95



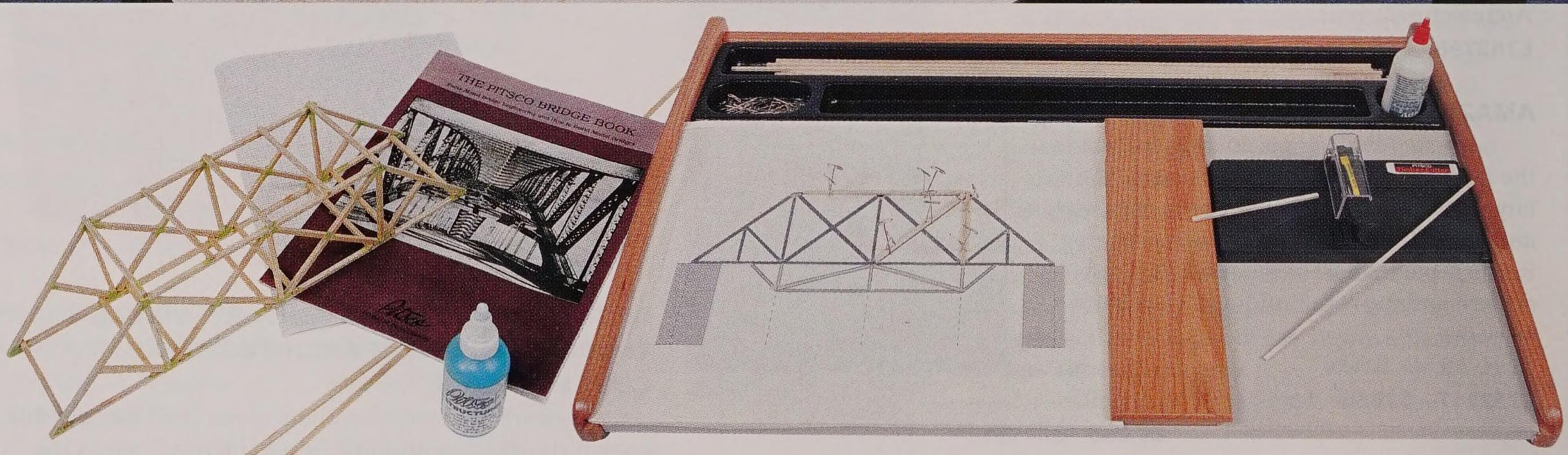
ARCHITECTURE IS ELEMENTARY: VISUAL THINKING THROUGH ARCHITECTURAL CONCEPTS

Written by one of the authors of *Art Is Elementary*, this book is designed to improve "visual literacy," which the author says usually stops at about a fourth-grade level in our country. The book's 50 lessons are organized on concepts that progress through seven levels of difficulty. Even though many of the concepts are simple (for example, order, scale, contrast), each concept still challenges even experienced designers and architects. Each lesson includes a short introduction to the concept, questions for productive thinking, and a list of suggested activities. Excellent for elementary, middle school, and high school teachers who want to incorporate right-brain and interdisciplinary learning into the classroom. Paperback, 256 pages.

Level: Intermediate-Adult

L756587—$24.95

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION



PITSCO BRIDGEPAK

(for class of 25 students)

Balsa or basswood strips, individual bottles of Pitsco colored wood glue, *The Pitsco Bridge Book*, student guide sheets, and so on.

Let's just say it's everything you need to complete an exciting bridge design and building activity for a class of 25.

Balsa strips are 1/8" x 1/8" x 24".

Basswood strips are 3/32" x 3/32" x 24".

L751706 Balsa—$75

L751707 Basswood—$75

L751705 The Pitsco Bridge Book—$2

10 books for $18

PITSCO CONSTRUCTION CADDY

The *Construction Caddy* is designed to organize often-cluttered engineering projects such as bridge building, structural projects, and model plane construction. The caddy holds pens, pencils, straight pins, glue bottles, and building material in an easy access tray. The spacious 12" x 26" work area accepts a piece of foam board and holds it firmly in place. Just tape a design template sheet to the foam board and pin the pieces to the board for convenient gluing. At the end of the period, the foam board can be slid out and stored in a safe place, and the *Caddy* is ready for more use. (Pitsco *Timber Cutter* sold separately.)

L713163—$129

L751528 Foam board sheets (3/16" x 12" x 36")—$2.25

10 sheets for $20.30

WAXED PAPER

L750032—$2.25 10 for $20.30

FreeFax™ Orders!
888-534-6784

PITSCO STRUCTURE TESTING DEVICE FOR SCIENCE OLYMPIAD

Designed specifically for testing bridges and towers in Science Olympiad competitions! Features a sturdy metal stand with an adjustable bridge span. A test block sits on the roadbed, under which a bucket is suspended. The load can be gradually applied to the bridge or tower by slowly adding sand (not included).

Includes stand, test block, chain, bucket, and other necessary hardware.

L754604—$195

LEGO Structures . 64-65
Early Structures Set 66-67
• *BridgePak 70-71*
Structure Tester 72
TowerPak 72

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

THE PITSCO BRIDGE BOOK

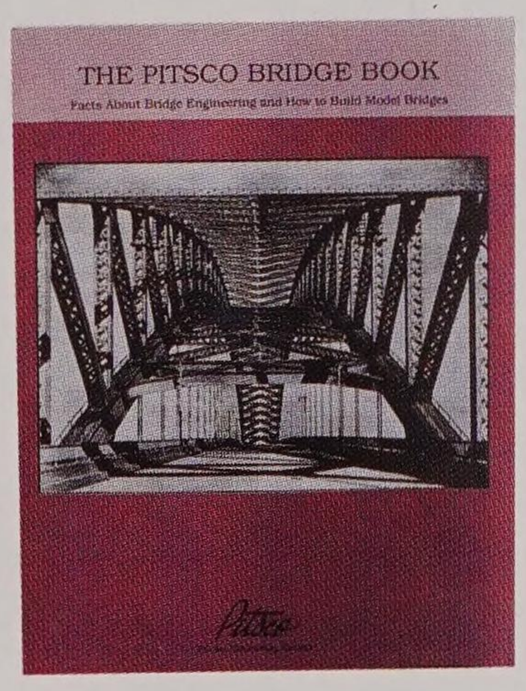
A complete guide to model bridge building. Discusses history of bridges, types of trusses, glue joints, and construction ideas.

Illustrated student guide includes competition rules, drawings, and a crossword puzzle to be filled out by the student. Can also be used as a teacher's resource. Paperback, 22 pages.

Level: Middle School-High School Teacher's Resource

L751705—$2

10 for $18



New

PITSCO DR. ZOON BRIDGE BUILDING VIDEO

How did the chicken cross the road? If it were smart, it built a bridge!

The bridge-building activity is a great way to integrate math, science, and technology. It's motivational, educational, and with Dr. Zoon, it's fun!

Learn step-by-step how to design and build a model bridge to support as much mass as possible! Time: 20 minutes.

Level: Middle School-High School

L757234—$24.95

PITSCO TIMBER CUTTER

The *Timber Cutter* from Pitsco has an ultrasafe, completely enclosed blade that works well for cutting small wooden strips and sticks used in various building projects. The razor-sharp blade rotates to allow virtually any cutting angle, and angle indicator marks serve as a guide. Five extra blades are included.

L718818—$19.95

TIMBER CUTTER BLADE PACKAGE

Replacement blades for the Pitsco *Timber Cutter*.

L718819 (pkg of 5)—$1.50 10 pkgs for $13.50

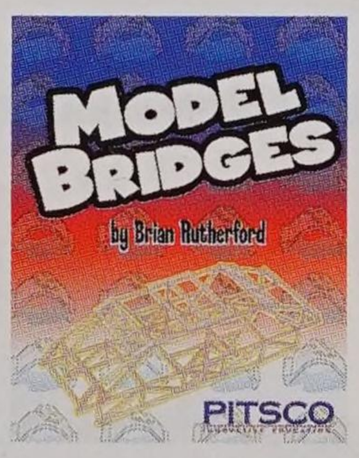
New

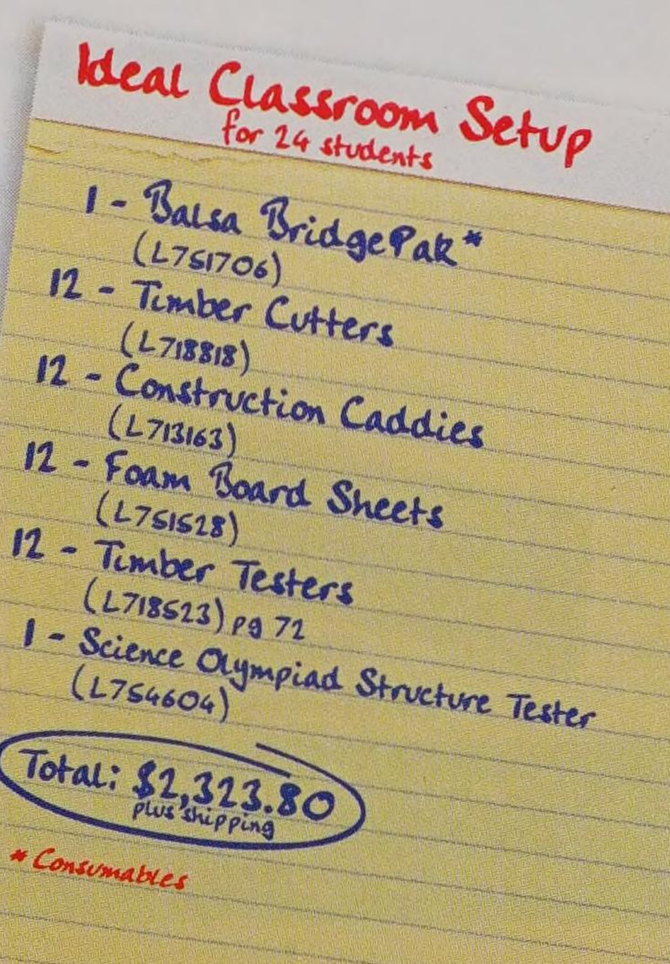
PITSCO MODEL BRIDGES

Students will explore structural engineering principles as they apply to the design of bridges, including how to analyze ways in which structures might fail. Instructions are provided so that students can follow the design process through sketching, drawing to scale, building, and testing model bridges of their own designs. Paperback, 27 pages.

Level: Middle School-High School

L757061—$4.95





PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

PITSCO TOWERPAK

(for class of 25 students)

The *TowerPak* is the most convenient and economical way to introduce an exciting tower activity to your entire class.

The *TowerPak* supplies an entire class with the materials they need for the activity – your choice of balsa or basswood building material, colored Pitsco structure glue (the color makes it great for locating and judging joints), 25 tower design grid sheets, and 25 copies of the tower design and building activity guide. Not intended for use with *Epicenter*.

L752534 Balsa—$95

L752537 Basswood—$95

PITSCO DI2000 STRUCTURE TESTER

The simple, safe, and effective method of testing student-engineered bridges and towers! Using a smooth, hand-operated pump, students can apply up to 1,000 pounds of force to everything from structures made of balsa sticks and toothpicks to craft stick bridges. They can watch the pounds of force gradually build on the digital display. When a structure fails, the maximum load reading is locked on the display for easy reading. Teachers will appreciate the convenience and accuracy of the *di2000 Structure Tester*. The ingenious design provides consistent, precise measurements every time. It's safe, too, featuring high-quality, high-strength construction and a transparent acrylic viewing shield.

Features:

- Quick, convenient, safe testing of structures
- Versatility to test both bridges and towers
- Brute force (tests up to 1,000 pounds)
- Accurate measurement with a digital readout
- Peak load-holding display
- Smooth, easy hand-pump operation
- One-button zero (tare) function
- One-button switching between kilograms and pounds
- PC software included – graphs structure tests in real time (Game card is not required.)

L721705—$1,295

PITSCO TIMBER TESTER

The Pitsco *Timber Tester* enables you to select the strongest timbers (balsa or basswood strips) to use in building a tower or bridge. Wooden sticks come from different trees or different parts of a tree, and therefore have different structural characteristics. Also, timbers, like baseball bats, have a "strong side" and can bear the highest loads when oriented correctly within a structure.

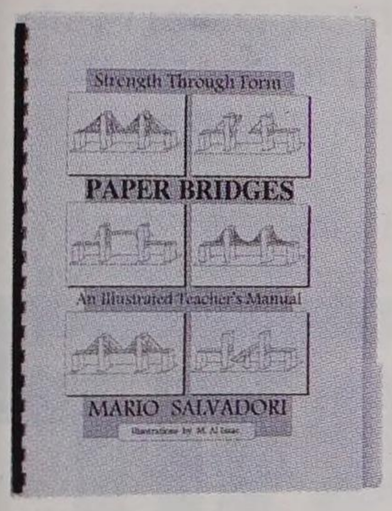
By using the *Timber Tester*, you can determine the best timbers to use for the most critical members of the bridge or tower, as well as the optimum way to orient the timbers to provide the maximum amount of load-bearing capacity.

The unit is durable, with the main member of the unit constructed of rugged ABS plastic. The testing span is adjustable from 4 to 12 inches, and the scale provides readings from 0 to 7 units of load. We recommend one *Timber Tester* for every four to six "structural engineers."

L718523—$19.95

Section Supplements 73

LEGO Structures . 64-65
Early Structures Set 66-67
BridgePak 70-71
• *Structure Tester 72*
• *TowerPak 72*



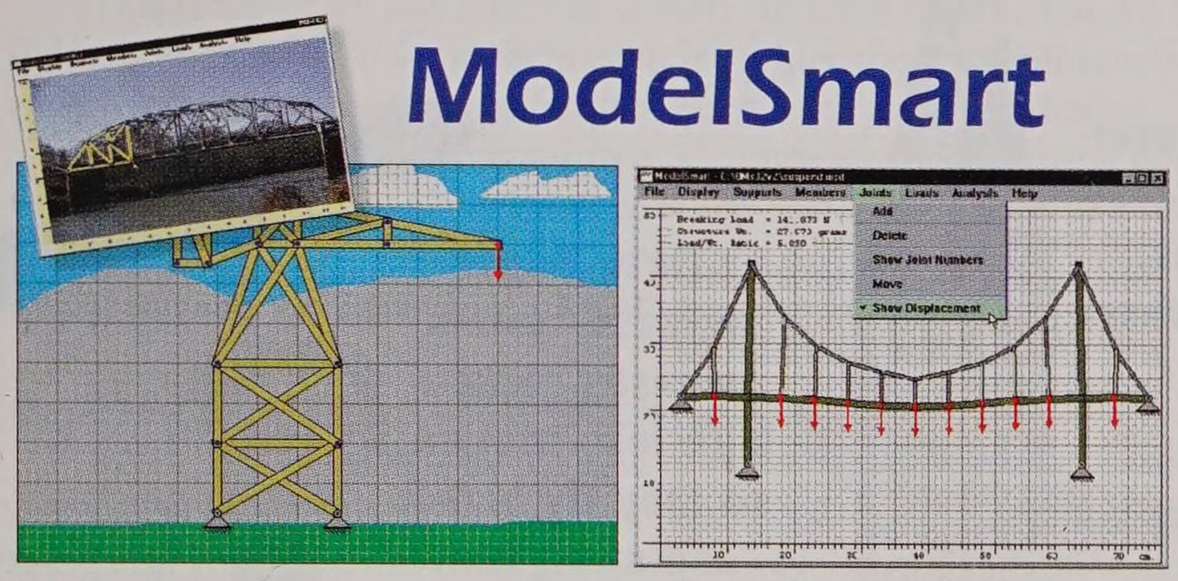
PAPER BRIDGES: STRENGTH THROUGH FORM, AN ILLUSTRATED TEACHER'S MANUAL

Mario Salvadori

Students in grades 5-9 can acquire a wealth of knowledge while having fun building paper bridges. The fantastic bridge-building activities in this guide introduce students to the engineering concepts of tension, compression, bending, and buckling. Students are led to invent their own models, which stimulate creativity as they experiment with structural concepts. The need for time limits, financial budgets, and team collaboration is also covered. Includes 12 activities. Paperback, 30 pages.

Teacher's Resource

L754924—$14 **10 for $126**



ModelSmart

MODELSMART

ModelSmart enables students to interactively design balsa and basswood models of bridges, cranes, towers, and all kinds of structural systems on the computer! *ModelSmart* then analyzes the model, gives numerical results, and simulates the results by showing a deflected shape or collapse. Students can explore structural design ideas before they begin building with real materials! Designed to introduce middle school and high school students to basic engineering concepts and reinforce math and science skills.

- Lab Pack license for use on five computers.
- School Pack license for use on 25 computers.
- Net Pack license for use on 1-30 station network.

L754648 Windows—$80
L754650 Macintosh—$80
L754651 Win School Pack—$695
L754652 Mac School Pack—$695
L754653 Win Lab Pack—$350
L754654 Mac Lab Pack—$350
L756187 Win Net Pack—$795
L756188 Mac Net Pack—$795

PITSCO BRIDGE BUILDING MEDALS

A great way to reward students for superior design and construction of model bridges. First-, second-, and third-place medals are 1-1/2" in diameter and feature a pin-on ribbon.

L751752 Gold
L751753 Silver
L751754 Bronze
$7.95 each

PITSCO STRUCTURAL ENGINEERING COMPETITION CERTIFICATES

Recognize students who compete in structural competitions!

L754641 (pkg of 25)—$3.95

New

PITSCO DR. ZOON TOWER BUILDING VIDEO

What is Dr. Zoon "babeling" about now?

Well, the first recorded tower building activity was the Tower of Babel. That one didn't work out well, so Dr. Zoon has some good tips and instructions for making your tower building a success.

For instance, did you know that rotating a piece of wood 90 degrees can make a tremendous difference in the strength of that piece? Watch and see! Time: 20 minutes.

Level: Middle School-High School

L757235—$24.95

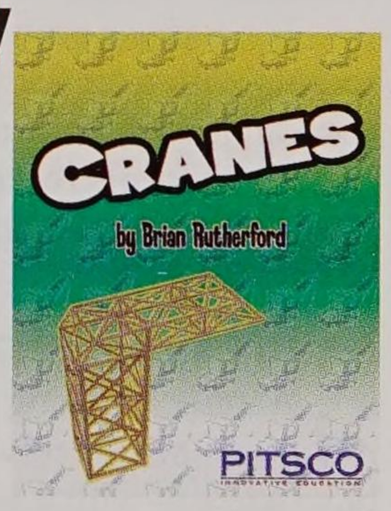
PITSCO CRANES

New

The same engineering principles used in the design of a bridge or tower can also be used to design a model crane. Challenge your students and add variety to your program by having them try new engineering problems, such as building a crane. Paperback, 32 pages.

Level: Middle School-High School

L757060—$4.95



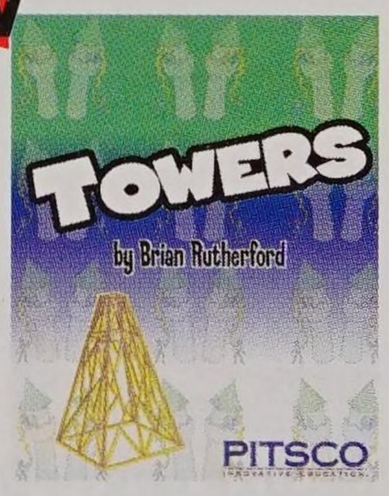
PITSCO TOWERS

New

Discover the secrets of building strong towers! This book investigates structural engineering principles as they apply to tower design. Students follow the design process as they sketch, draw to scale, build, and test their own model towers. Paperback, 32 pages.

Level: Middle School-High School

L757059—$4.95



BALSA STRIPS

Use these balsa strips for bridge and tower building and other structural engineering projects.

L752732 1/8" x 1/2" x 36" (25 pcs)—$16
L752733 1/4" x 1/4" x 36" (25 pcs)—$14
L752734 1/8" x 1/8" x 36" (50 pcs)—$13
L752735 3/8" x 3/8" x 36" (15 pcs)—$17
L751730 3/32" x 3/32" x 24" (50 pcs)—$7.95
L754655 1/16" x 1/16" x 24" (50 pcs)—$6.95

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

AQUAPORT

PITSCO AQUAPORT LAUNCHER

Water rocketry is one of the most exciting hands-on science activities we've seen. Converting empty plastic soda bottles into high-flying rockets provides a great opportunity for students to discover important scientific principles, including Newton's Laws, acceleration, thrust, and inertia.

The *AquaPort* is the safest and most consistent way to launch water rockets. It accepts 2-liter, 20-ounce, and many 1-liter bottles. The innovative three-finger latch securely holds the pressurized rocket in place until you pull the launch cord. A safety pin prevents accidental launches, and the *AquaPort*'s stable base and low-effort release add to its safety.

For a super-economical activity, pressurize your rockets with a bicycle pump. With no engines to buy, you can launch your rockets again and again! The *AquaPort* accepts rockets with low-hanging fins and breaks down for complete portability.

L755499—$139

GAUGE/MANIFOLD ACCESSORY

A must for using compressed air sources with the *AquaPort*, the *Gauge/Manifold Accessory* is also very handy to use with a bike pump. The built-in relief valve limits bottle pressure to a safe 90 psi to prevent bottle ruptures. The precision gauge provides accurate bottle-pressure readings. Also features an in-line check valve.

L719981—$89

DELUXE PORT PUMP (SHOWN)

This top-notch bike pump will withstand years of use. It features all-metal construction and a heavy-duty rod that resists bending. Pumping a bottle rocket is less work with this pump because of precision seals that prevent internal leaking. Also features a top-mounted pressure gauge, a locking hose end, and a contoured, rubberized handle.

L719978—$69.95

ECONOMY TIRE PUMP

This is a sturdy but economical tire pump. Includes pressure gauge.

L757190—$24.95

Call Toll Free!
800-362-4308

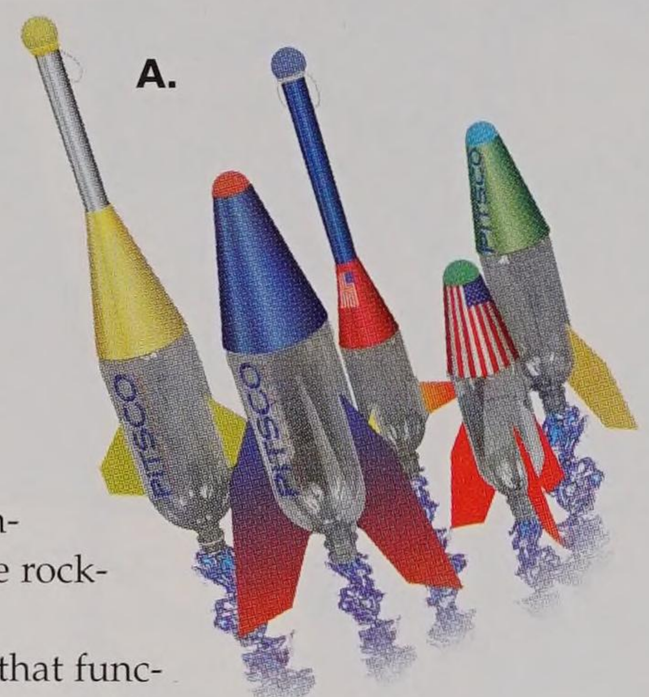
- *AquaPort 74-75*
- *Straw Rocket Launcher. 78-79*
- *Hot-Air Balloon Launcher. 80-81*
- *Kite Explore-A-Pak . . 82*
- *AquaTrak 84-85*

A. PITSCO BOTTLE ROCKET SMORGASBORD

The *Bottle Rocket Smorgasbord* is a great starter pack for advanced bottle rocketeers! Students can supply their own 20-ounce, 1-liter, or 2-liter bottles (and a little ingenuity) and use them to construct their own high-performance bottle rockets. Enough to build 25 rockets.

The *Smorgasbord* contains a veritable cornucopia of materials – transition and nose cone templates, Ping-Pong™ balls, three types of fin materials, body tubes, string, sandpaper, parachute reinforcement rings, and more. Not for internal consumption.

L755749—$59



A.

B. PITSCO STRATOBLASTER BOTTLE ROCKET KIT

This fantastic kit has all the materials students need to build a high-flying bottle rocket! It's a great way to introduce them to building bottle rockets, giving them a measure of initial success with a proven design.

The innovative design features a 20-ounce plastic soft drink bottle that functions as a propellant tank and a Ping-Pong™ ball that works as a nose cone and recovery system.

L755746 (no CO_2 cartridge)—$4.95 10 for $45 100 for $420

B.

C. PITSCO R2K BOTTLE ROCKET KIT

R2K – Rocket 2000 – for the new millennium! With the *R2K Bottle Rocket Kit*, you supply the bottle (20-ounce or 2-liter) and a cool-melt glue gun, and we supply everything else your students need to construct a bottle rocket: body tube, transition cones for 20-ounce and 2-liter bottles, fin material, nose cone, and even sandpaper for roughing the plastic before cool-melt gluing the fins on the rocket. Once completed, use Pitsco's *AquaPort* launch system to launch the rockets to 200 feet or more!

L720758—$3.45

10 for $31 100 for $279

PITSCO R2K CLASSROOM PAK

(For a class of 25 students.)

Bottle rockets for the whole class!

The *R2K Classroom Pak* contains materials to make 25 R2K – Rocket 2000 – bottle rockets. Have students recycle 20-ounce or 2-liter bottles from home, and have cool-melt glue guns available for use during assembly. Bulk packed to save you money.

L720759 (Pkg for 25)—$65

10 pkgs for $585

C.

PITSCO BOTTLE ROCKET VIDEO

This video guides students through the construction and launch of the Pitsco *Stratoblaster* bottle rocket. They'll learn about the action/reaction principle of rocket thrust and how bottle rockets work much like NASA's rockets! The basic parts of rockets and the three basic forces that affect rocket flight are explained. Time: 12 minutes.

Level: Middle School-High School

L755131—$29.95

New

PITSCO DR. ZOON STRATOBLASTER VIDEO

Dr. Zoon launches into new worlds, using the Pitsco *Stratoblaster* as his vehicle! Join Dr. Zoon as he demonstrates how to construct a *Stratoblaster* bottle rocket and then launches it using the Pitsco *AquaPort*! Use this video as a prequel to students doing the bottle-rocket activity. Let them see the processes they will be using during the construction of their *Stratoblasters*. Along with construction steps and tips, Dr. Zoon adds his own colorful, scientific explanations of the concepts behind bottle rockets and their flight. Key concepts include drag, ballast, and action-reaction. Time: 20 minutes.

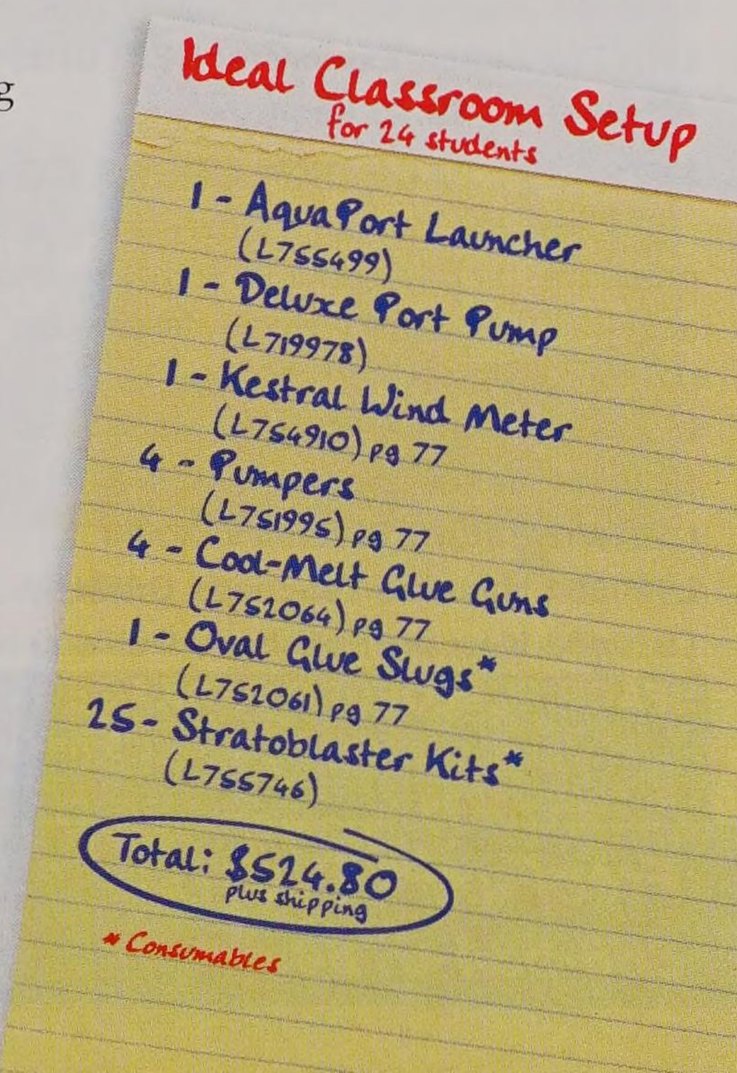
Level: Middle School

L757051—$24.95

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html



PITSCO SPACE EXPLORERS COMICS

EXCLUSIVE

Ride along with Mortimer Mutt, Rusty the Robot, and other characters while learning about space, space exploration, and science. Young students will enjoy coloring the illustrations in these books.

Level: Intermediate

L990014 Space Explorers: MARS, 21 pages
L990015 Space Explorers: MERCURY, 21 pages
L990016 Space Explorers: PLANET EARTH'S MOON, 21 pages
L990017 Space Explorers: VENUS, 22 pages
L920508 Space Explorers: URANUS, 24 pages
L920507 Space Explorers: SATURN, 24 pages
L920510 Space Explorers: PLUTO, 24 pages
L920506 Space Explorers: JUPITER, 24 pages
L920509 Space Explorers: NEPTUNE, 24 pages
All comics—$2.95 each

EXCLUSIVE

PITSCO SPACE EXPLORERS COMICS TEACHER'S GUIDES

Once you capture children's imagination with *Space Explorers Comics*, you can maximize their learning with these valuable teacher's guides. They are filled with activities, vocabulary words, fascinating facts to share with students, lessons, puzzles, coloring pictures, and more.

L920499 Planet Earth's Moon Teacher's Guide
L920500 Venus Teacher's Guide
L920502 Saturn Teacher's Guide
L920504 Neptune Teacher's Guide
L920498 Mercury Teacher's Guide
L920497 Mars Teacher's Guide
L920501 Jupiter Teacher's Guide
L920503 Uranus Teacher's Guide
L920505 Pluto Teacher's Guide
All Guides—$1 each

SPACE EXPLORERS PACKAGE

Includes all Asimov videos, comic books, and teacher's guides on this page.

L990082—$234

FreeFax™ Orders!
888-534-6784

ISAAC ASIMOV'S INNER AND OUTER PLANETS VIDEOS

These fascinating videos shed light on all the planets in the galaxy we Earthlings call home, the Milky Way. The concise format of the videos will hold students' attention while giving them a basic, well-rounded knowledge of the planets.

In addition to fascinating scientific facts, the videos address intriguing issues such as: How did ancient civilizations perceive these mysterious heavenly bodies? How were they identified and observed by the early explorers? What was learned about the planets in past space missions? And finally, what does the future of humankind's space endeavors hold in store for the planets? Teacher's guide included with each video. Time: 9-15 minutes.

The Inner Planets

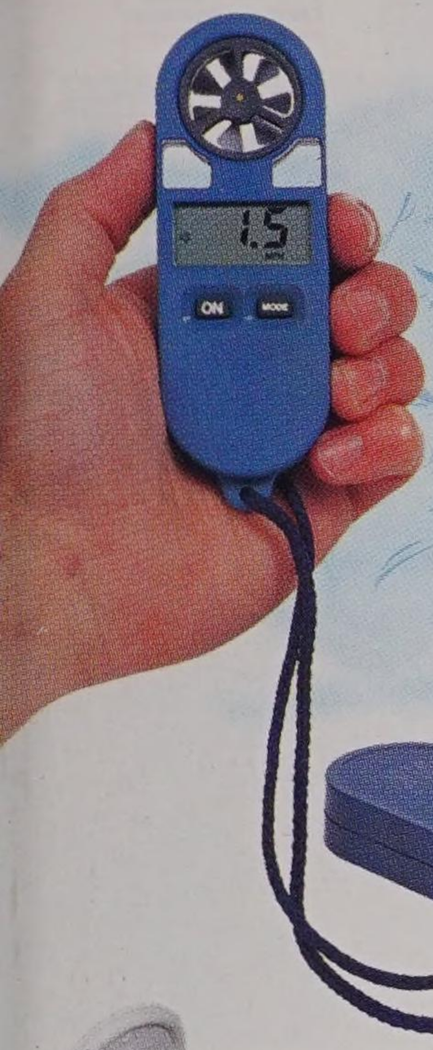
L956173 Mercury: The Quick Planet
L956174 Venus: A Shrouded Mystery
L956175 The Earth's Moon
L956176 Mars: Our Mysterious Neighbor

The Outer Planets

L956177 Jupiter: The Spotted Giant
L956178 Saturn: The Ringed Beauty
L956179 Uranus: The Sideways Planet
L956180 Neptune: The Farthest Giant
L956181 Pluto: A Double Planet
All videos $24.95 each

For grant resources and correlations to state standards go to www.pitsco-legodacta.com/html/standards.html

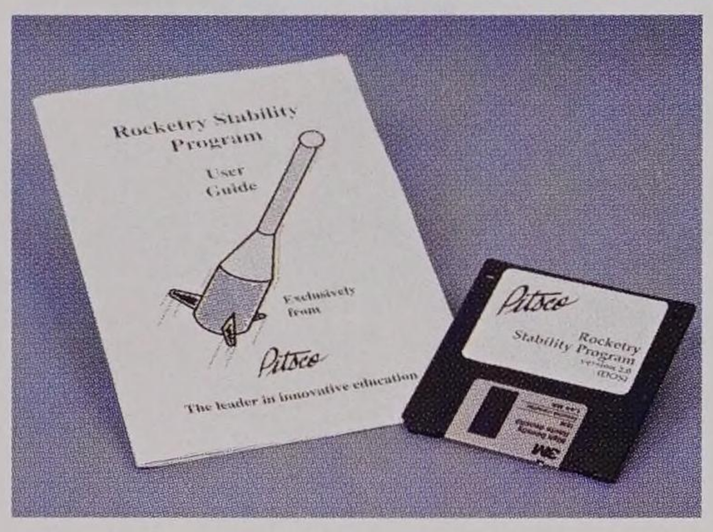
AquaPort 74-75
Straw Rocket Launcher. 78-79
Hot-Air Balloon Launcher. 80-81
Kite Explore-A-Pak . . 82
AquaTrak 84-85



KESTREL POCKET WIND METER

Get accurate, fast, and easy wind speed measurements anywhere, anytime. The *Pocket Wind Meter* features a large LCD window that is easily read and offers three modes: wind speed, average wind speed, and maximum wind speed. An ultralight anodized aluminum impeller yields high accuracy (within 3%) and a low start-up speed. The rugged unit is waterproof and floats. Includes a lanyard and a hard case that easily snaps on and off. Battery included!

L754910—$109

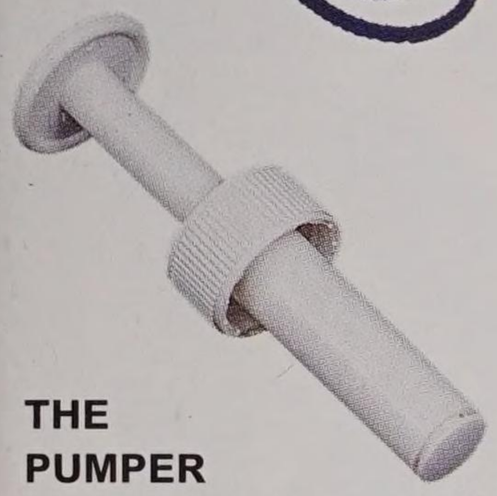


PITSCO ROCKETRY STABILITY PROGRAM

This software is an excellent addition to any water rocket design project. It provides a calculated, preflight prediction of any water rocket design's flight performance.

Rocketry Stability Program prompts you to input specific details of your design dimensions, nose cone shape, number of fins, location of CG, and so on. The program will then complete a mathematical analysis of your design's stability. You can even make "virtual design changes" to see how they affect flight performance.

L713467 DOS—$25



THE PUMPER

This device was created to keep your soda fizzy, but it's also extremely handy when building bottle rockets. Pump the bottle before marking for fin placement or attaching fins. The air pressure will keep the bottle rigid, making the task much easier.

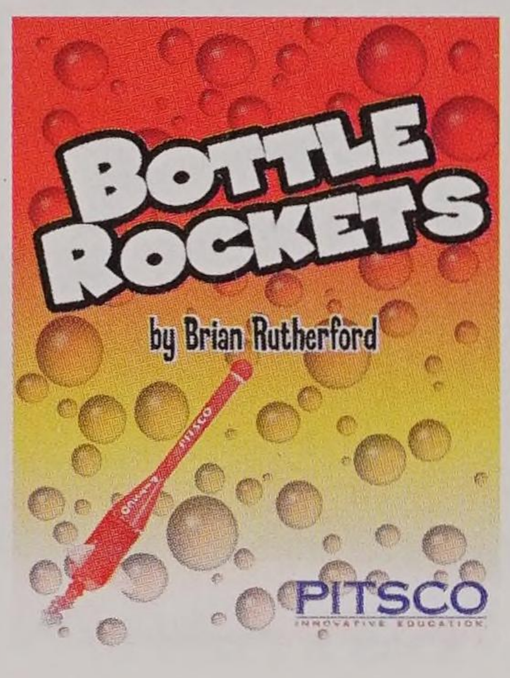
L751995—$3.25

COOL-MELT GLUE GUN

This gun uses glue that melts at a lower temperature than glue in ordinary glue guns. Due to the lower temps, it is safer for young hands and will not melt through plastic bottles and many plastic parts. Uses oval-shaped glue slugs that cannot be confused with hot-melt slugs.

L752064—$15.95

L752061 Oval Glue Slugs (pkg of 30)—$6.30



PITSCO BOTTLE ROCKETS

Few classroom activities will top this one for high interest! This is a great book to introduce the theory of flight, rocket design, and construction of a bottle rocket. Instructions are provided for the *R2K Bottle Rocket Kit* and for the design of a rocket that will transport a raw egg and return it unbroken. Paperback, 25 pages.

Level: Middle School-High School

L757057—$4.95

ASTRONAUT FOOD SERIES

Now, you and your students can enjoy the same food that is served in a lofty place with real atmosphere. These freeze-dried delicacies are similar to those eaten by U.S. astronauts on past and present space missions.

L754120 Cheese Pizza—$3.00
L754073 Neapolitan Ice Cream—$2.50
L754072 French Fries—$1.95
L754007 Ice Cream Sandwich—$2.95
L754855 Eggs/Applesauce Breakfast—$5.95
L754857 Rice & Chicken Dinner—$5.95

SHUTTLE IN ORBIT WALL MURAL

This giant wallpaper mural creates an exciting learning environment for your students. Printed in full-color, it measures a big 8' 3" (h) x 13' 8" (w). Put the finishing touch on that blank wall you've been wanting to fill. Mural comes in eight separate rolls and is hung like regular wallpaper, using dry cellulose paste.

L751462—$69

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78 Straw Rocket Launcher

EXCLUSIVE

PITSCO STRAW ROCKET LAUNCHER

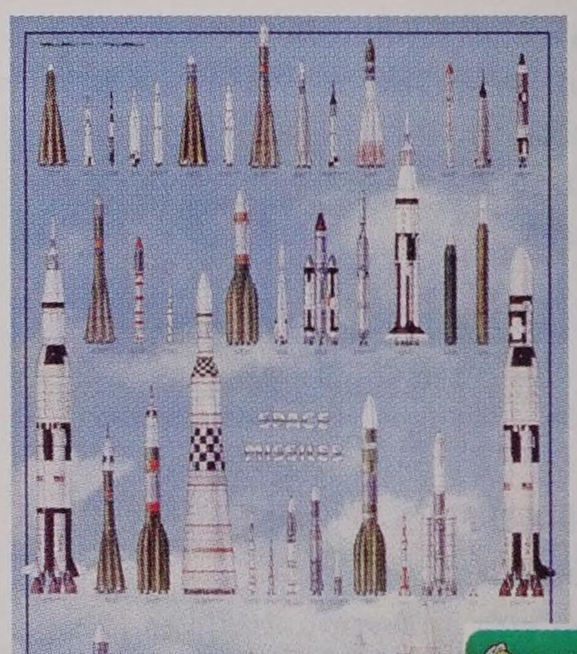
Students can design and build their own miniature straw rockets and test them on the *Straw Rocket Launcher*! Just like early rocket pioneer Robert Goddard, they can conduct scientific experiments by varying the trajectory angle and launch energy. Rockets can be launched to distances up to 50 feet!

The *Straw Rocket Launcher* features extremely simple operation. No power or air source is required; the pneumatic force is developed by releasing a weighted drop rod in the cylinder. The force of the launch can be controlled by varying the release height of the rod.

Building straw rockets is a fun, inexpensive activity and a great way to introduce students to rocketry. Use with 1/4"-diameter straws. Recommended for use in a large, open indoor area, such as a gymnasium. Base size: 9" x 11". Height: 25".

- Launches up to 50 feet
- 1/4"-diameter straws
- Simple operation
- Adjustable trajectory angle with angle gauge
- No power or air source required
- Clear tube displays internal parts
- Adjustable launch force

L720426—$139



SPACE ROCKETS POSTER

Size: 27" x 38-1/2".

L752715—$6.75

POSTER TACK

This mounting putty is great for mounting the nose cone on straw rockets.

L990071 (1-oz pkg)—$3

PLASTIC STRAWS FOR STRAW ROCKETS

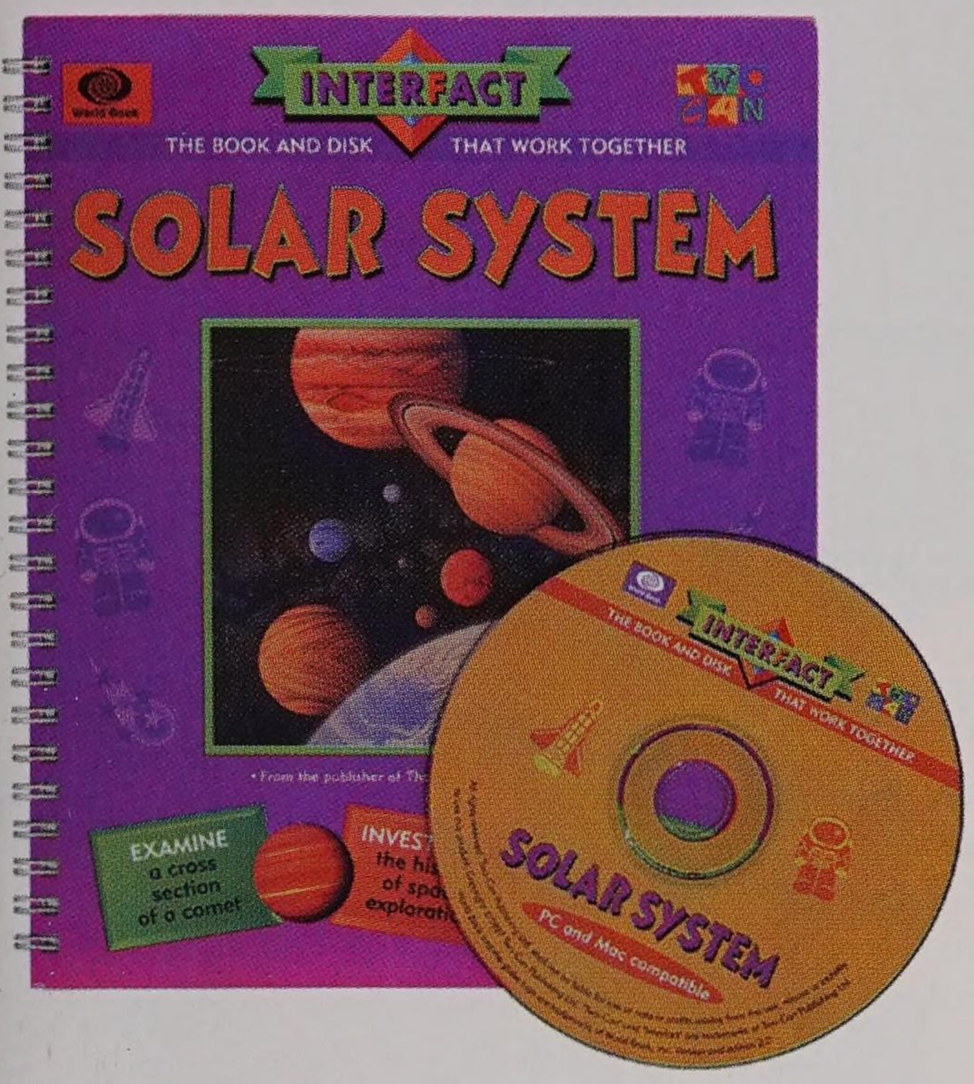
Use these straws to build your straw rockets.

L715909 Clear, 1/4" dia (box of 500)—$4

L715910 White/red stripe, 1/4" dia (box of 500)—$4

Straw Rocket Launcher

AquaPort 74-75
• Straw Rocket Launcher. 78-79
Hot-Air Balloon Launcher. 80-81
Kite Explore-A-Pak . . 82
AquaTrak 84-85

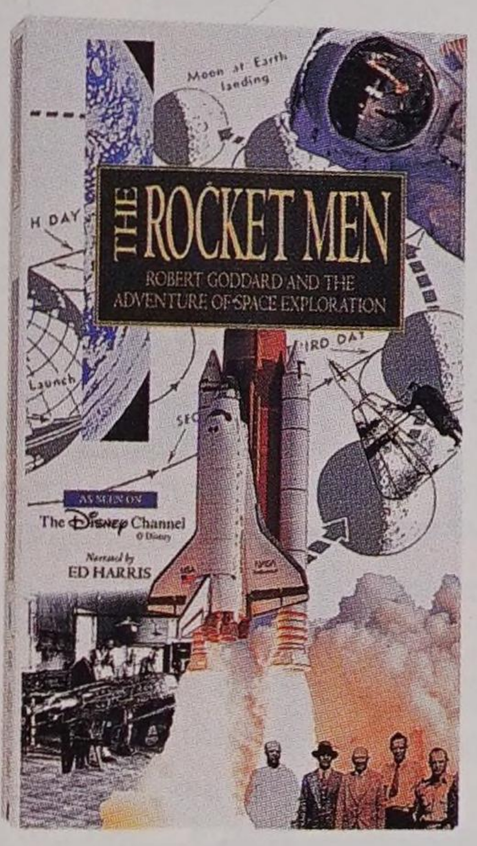


SOLAR SYSTEM BOOK AND CD-ROM

Explore the solar system with this interactive book and CD-ROM. Students will be able to read about the solar system and apply the readings to exciting games, puzzles, and experiments on the CD-ROM.

Level: Intermediate

L756131—$14.95



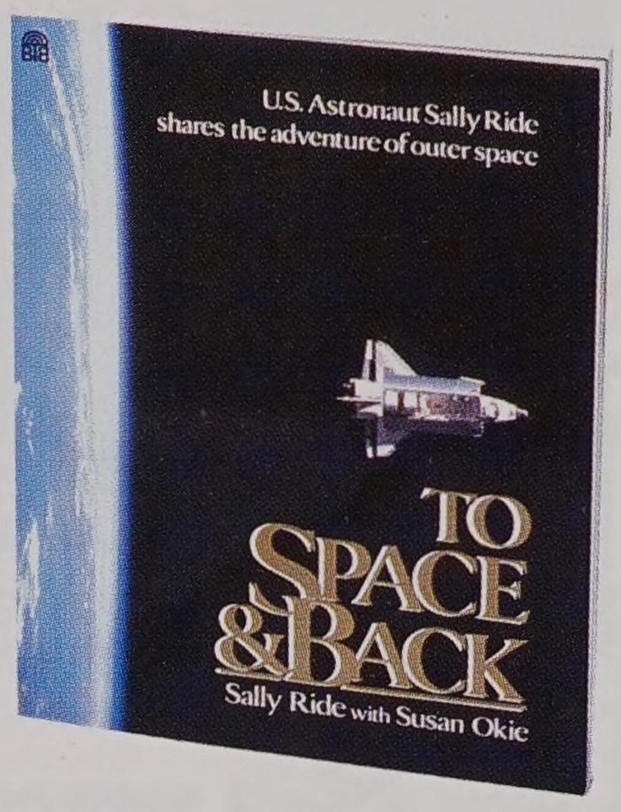
THE ROCKET MEN

Experience the amazing story of Robert Goddard and the inventions that made space exploration possible! This wonderful production tells the story of Robert Goddard and the other scientific visionaries who developed the powerful rockets that play such an important role in our history. It is a story of frustration, perseverance, and brilliance that continues to stir our imagination. Journey to the "Final Frontier" with the men that made its exploration possible.

Time: 60 minutes.

Level: Middle School-High School

L754094—$29.95



TO SPACE & BACK

Sally Ride with Susan Okie

Students will obtain a "you-are-there" adventure into space as they accompany astronaut Sally Ride from blastoff, through space, and back to landing. This book gives a vivid description of the human side of exploring the adventure of space flight. Paperback, 96 pages.

Level: Intermediate-Middle School

L752263—$12.95

BIG ROCKET SHIP BULLETIN BOARD SET

Launch your students into space exploration with this bulletin board package containing a large, brightly colored rocket ship, plus 32 colorful space-themed pieces to be used as name tags, graph indicators, and more. A bonus handout contains suggested classroom activities and reproducible activity pages. Bulletin board not included.

L990217—$7.95

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

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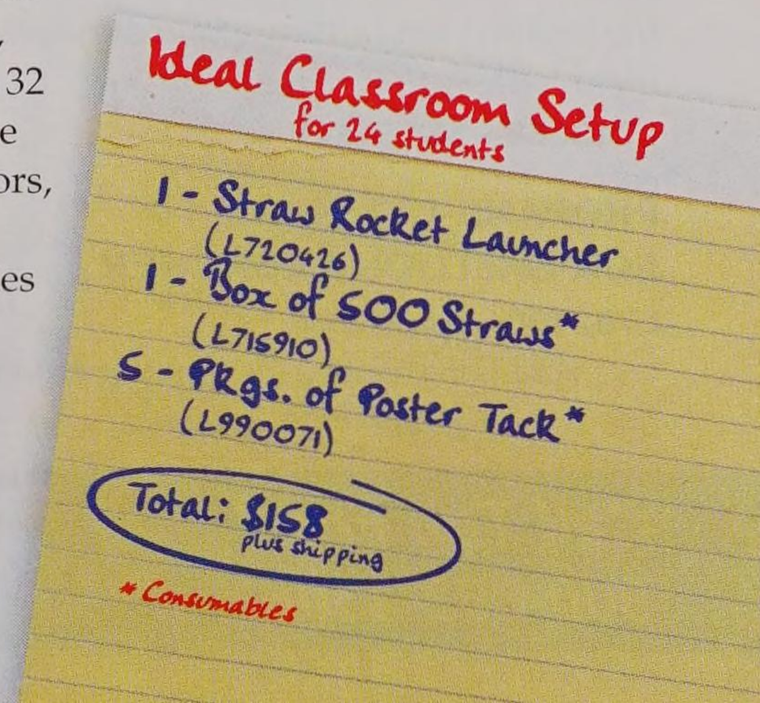
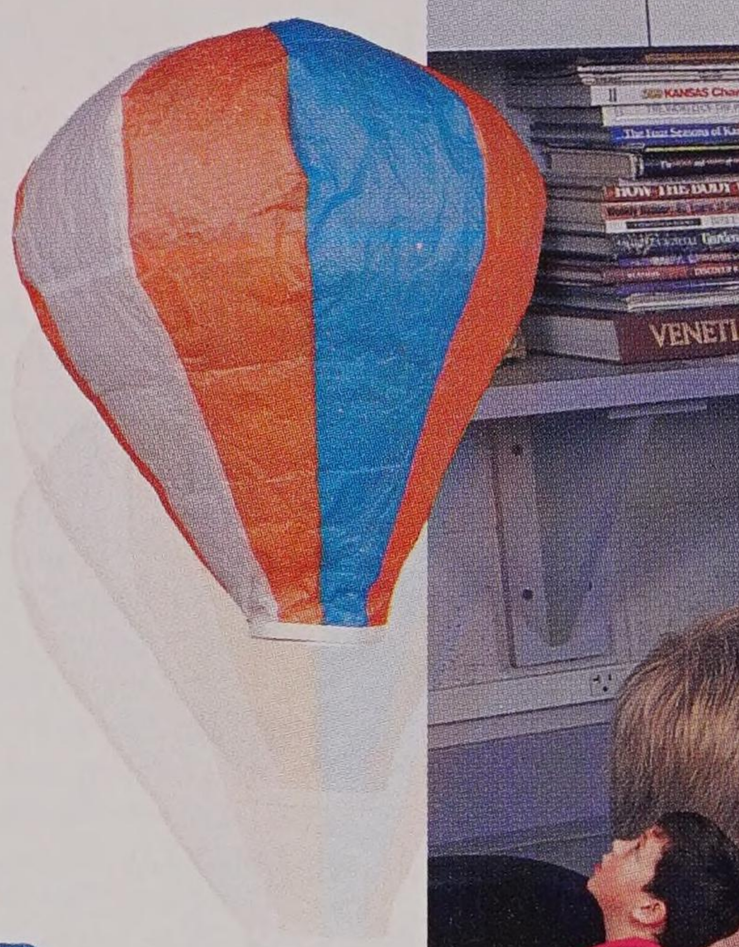


80 Hot-Air Balloon Launcher



PITSCO HOT-AIR BALLOON LAUNCHER

Get your program off the ground with this quality launcher.

Your students will enjoy producing their very own hot-air balloons using tissue paper. With design details available in Pitsco's book, *Hot-Air Ballooning Student Guide*, this launcher provides the final link in successful balloon flights.

Designed with the student's safety in mind, the Pitsco *Hot-Air Balloon Launcher* inflates balloons with ease. The unit features a "cool-to-the-touch" chimney, a safety grate, a piezo-electric lighter, and connectors to attach the unit to standard propane canisters (not included).

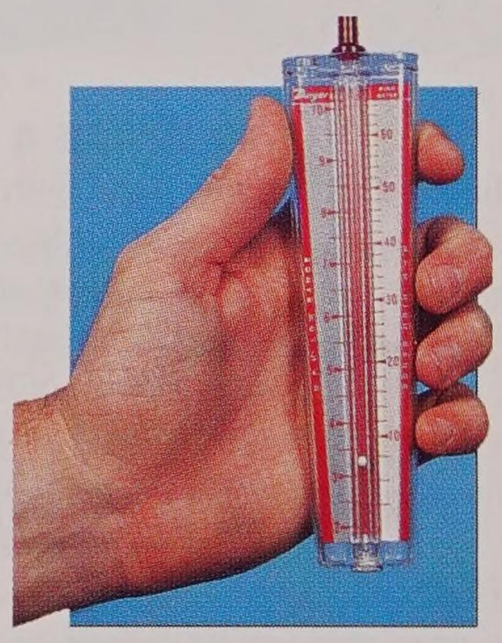
L713268—$345

PROPANE CYLINDER FOR BALLOON LAUNCHER

L752100—$4.95

Additional charge for shipping required.

See page 126 for explanation.



PORTABLE WIND METER (MPH)

Take the guesswork out of rocket launches, kite-flying sessions, hot-air balloon launches, glider competitions, or any other activity where the velocity of the wind is a factor. This handy unit measures the wind velocity with dual ranges (2-10 mph and 4-66 mph).

L715557—$16.50

PITSCO HOT AIR BALLOON EXPLORE-A-PAK

EXCLUSIVE

This activity is a lifting experience for you and your students! Everything is included for 30 students to make a fantastic hot-air balloon – multicolored tissue paper, glue sticks, string, and more. A gore pattern helps the students cut each balloon panel for a perfect fit. A student booklet about the history of hot-air ballooning, including puzzles, provides educational background for the activity.

L990001—$160

Hot-Air Balloon Launcher

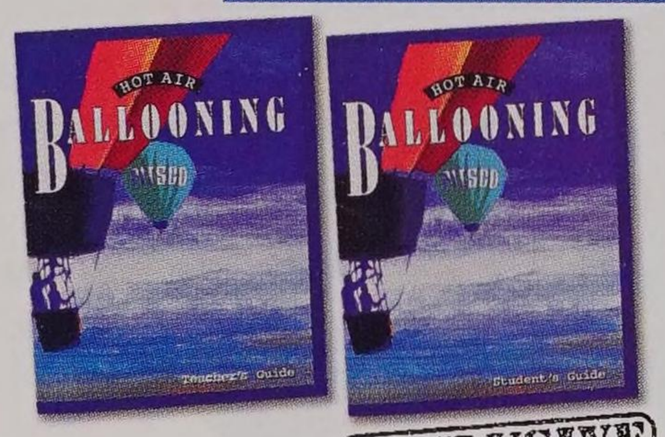
AquaPort 74-75
Straw Rocket Launcher. 78-79
•*Hot-Air Balloon Launcher. 80-81*
Kite Explore-A-Pak . . 82
AquaTrak 84-85

EXCLUSIVE

PITSCO GORE PATTERN

Use this pattern as a template to make hot-air balloons in your classroom! The pattern is 56" long and 10-1/2" wide at its widest point and is made of heavy, glossy paper. Make individual gore patterns for your students, and then have them cut 10 gores from balloon paper to make their balloons.

L990002—$4.95



EXCLUSIVE

PITSCO HOT AIR BALLOONING TEACHER'S GUIDE

This guide covers the entire process of making and flying balloons. It demonstrates density, porosity, and expansion of heated air – science concepts important in hot-air ballooning. Paperback, 36 pages.

Teacher's Resource: Intermediate-Middle School

L990004—$9.95

EXCLUSIVE

PITSCO HOT AIR BALLOONING STUDENT'S GUIDE

This guide includes simplified information on the history of ballooning, what makes balloons fly, the parts of a hot-air balloon, and the process of launching and flying a balloon. Paperback, 18 pages.

Level: Intermediate-Middle School

L990003—$2

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

EXCLUSIVE

PITSCO UP WITH BALLOONS VIDEO

A humorous look at the history of hot-air ballooning and the basics of how a hot-air balloon flies. Time: 10 minutes.

Level: Intermediate-Middle School

L990005—$29

EXCLUSIVE

PITSCO HOT AIR BALLOON DESIGN & MAKE VIDEO

Step-by-step instructions on how to make a 10-gore balloon from tissue paper are outlined in this video. The narrator takes the viewer through the entire process, from making a design on paper, to cutting and gluing the gores, to launching the balloon. Time: 15 minutes.

Level: Intermediate-Middle School

L990006—$29

BALLOONS IN FLIGHT MURAL

Lift your students to new heights with this bright, colorful wall mural. A great addition to balloon building, you can use this mural on one wall of your classroom as a motivational tool. Size: 8' 3" x 13' 8".

L750889—$69

PITSCO INDOOR BALLOON TESTER

Before the big launch outside, wouldn't it be nice to test student balloons in the confines of your school?

This innovative launcher will test-fly hot-air balloons safely and effectively. Because the unit runs on electricity, you don't have to worry about fumes from the unit. You will, however, need to have a heavy extension cord available (12 gauge recommended) for optimum performance.

Note: This unit is intended for indoor use only. For outdoor launches, purchase the Pitsco *Hot-Air Balloon Launcher*.

L713263—$79

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

Ideal Classroom Setup
for 24 students

1 - Hot-Air Balloon Launcher (L713268)
1 - Propane Cylinder (L752100)
1 - Indoor Balloon Tester (L713263)
1 - Hot-Air Balloon Explore-A-Pak* (L990001)
24 - Hot Air Ballooning Student's Guides (L990003)
4 - Balloon Gore Patterns (L990002)
1 - Kestral Wind Meter (L754910) pg 77

Total: $765.75 plus shipping

* Consumables

PITSCO KITE EXPLORE-A-PAK

EXCLUSIVE

(For a class of 25 students.)

Introduce your entire class to the educational fun of making fantastic kites! The *Kite Explore-A-Pak* includes everything a class of 25 students needs to complete this high-flying activity – colorful tissue, string, glue sticks, teacher's guide with student worksheets that can be duplicated to accommodate your class size, and more!

L990007 (pkg of 25)—$60

New

PITSCO DR. ZOON KAZOON KITE VIDEO

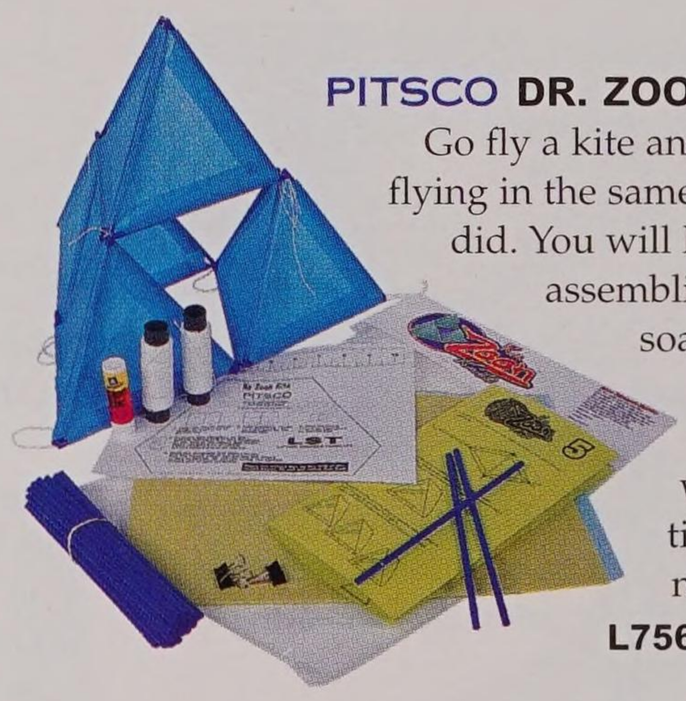
Constructing a kite can be an uplifting experience – especially when Dr. Zoon shows you how to do it.

Watch as Dr. Zoon builds a tetrahedron kite by using items contained in the *Dr. Zoon KaZoon Kite Kit* (sold separately). By following Dr. Zoon's step-by-step instructions, students learn how to construct their kites for maximum success aloft and are exposed to math and science principles in the process. Students can use materials contained in the *Dr. Zoon KaZoon Kite Kit* or the *Kite Explore-A-Pak*. Time: 20 minutes.

Level: Intermediate-High School

L756860—$24.95

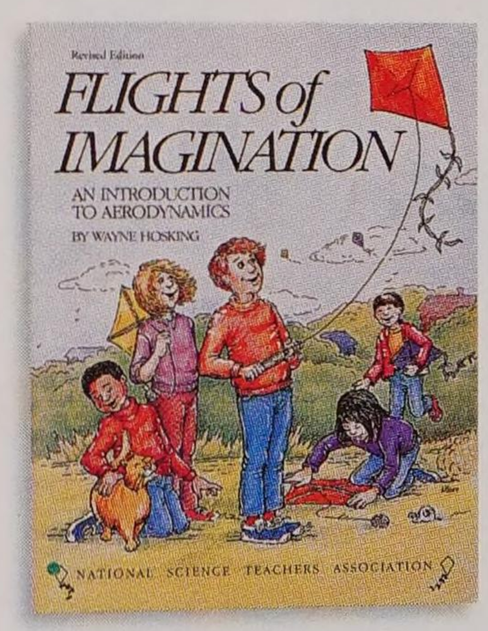
New



PITSCO DR. ZOON KAZOON KITE KIT

Go fly a kite and discover the principles of flying in the same way the pioneers of flight did. You will learn about flight while assembling a flying machine that soars so easily you may have trouble getting it down! This kit comes complete with step-by-step instructions and everything else you need except wind!

L756772—$6.95



FLIGHTS OF IMAGINATION

With the use of kites, gliders, and airfoil projects, this book is an introduction to aerodynamics. Students investigate the fundamentals of flight through 18 hands-on projects. Each activity presents a clearly described principle of aerodynamics and then puts it into action with readily available materials. Paperback, 55 pages.

Level: Intermediate-High School

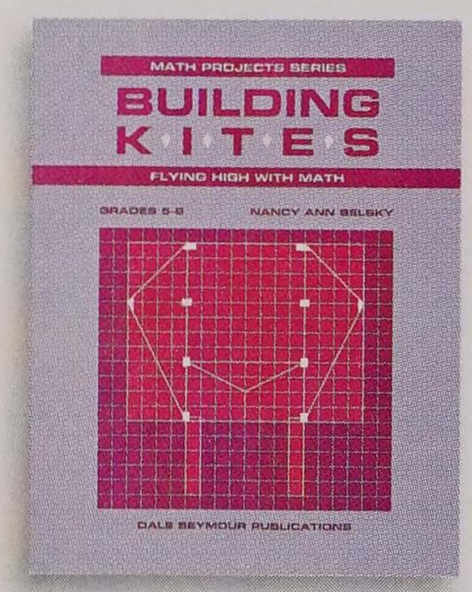
L754102—$19.95

KITES FOR EVERYONE

Great illustrations and activities make this book one every kite lover will have to have! An expert on kites in the classroom and on fabric kite construction, Margaret Greger has combined the information from her three previous books on kites into this one manuscript. Paperback, 136 pages.

Level: Intermediate-Middle School

L753187—$13



MATH PROJECTS SERIES: BUILDING KITES

This great activity book integrates mathematics into kite building. These fun, challenging hands-on kite projects provide opportunity for students to:

- Follow and solve problems.
- Express their creativity while planning and building usable models.
- Apply math as they enlarge patterns, determine measurements, and look for relationships.

Paperback, 65 pages.

Level: Intermediate-Middle School

L753173—$11.95

DELTA DART

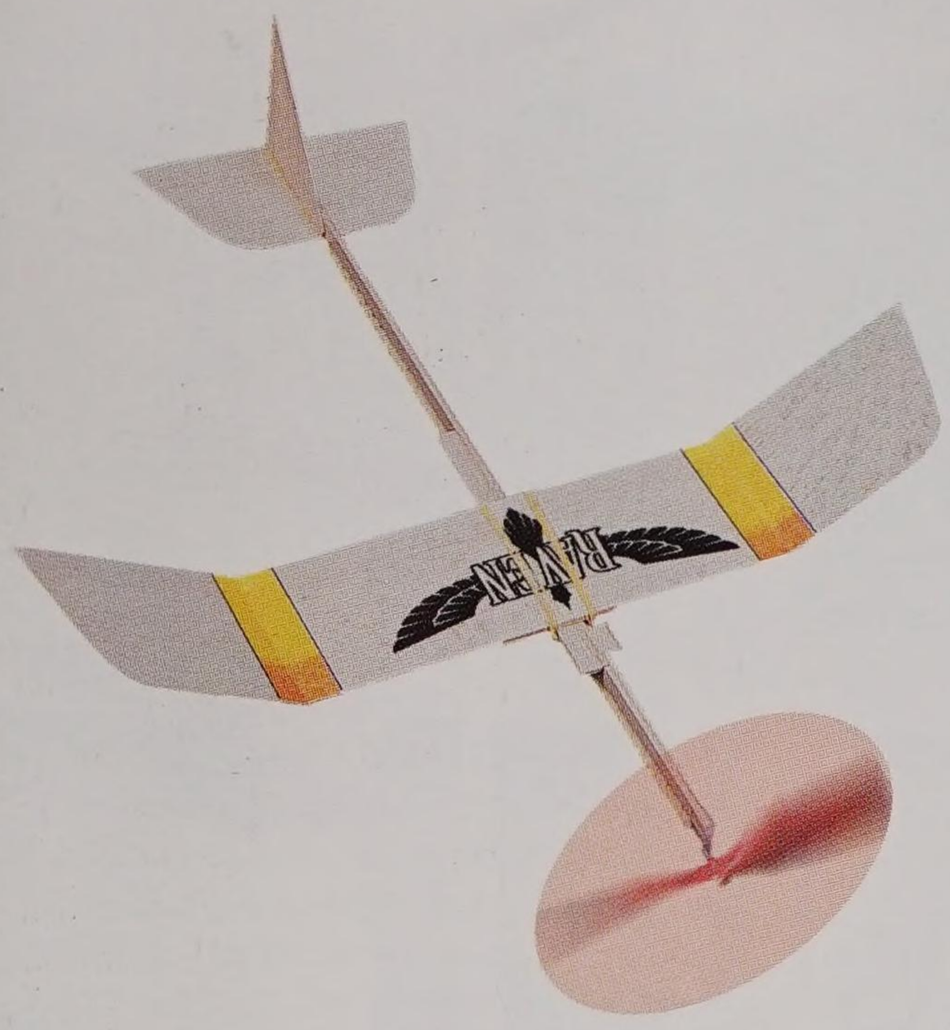
Use this model for Grades 4 and up. Pylon-mounted, paper-covered wings give stable flight. Indoor or outdoor use. Rubber band-powered. Wingspan of 11-1/2".

L750187 (pkg of 35)—$45

10 pkgs for $405

L755522 (pkg of 8)—$15.50

AquaPort 74-75
Straw Rocket Launcher. 78-79
Hot-Air Balloon Launcher. 80-81
• *Kite Explore-A-Pak* . . 82
AquaTrak 84-85



PITSCO RAVEN

Impressive flight performance makes the *Raven* a blast to build and fly. This outdoor rubber band-powered model airplane climbs briskly (up to 200 feet!) in a graceful circular pattern and then glides to a gentle landing. Features balsa construction and a large 16-1/2" wing span. Building instructions plus great flying tips are included.

L755748 Individual Kit—$6.95
L755750 (pkg of 6)—$35
L755752 (pkg of 24)—$120

TEACHER DEMO KIT

Demonstrate for students the fun and learning of the *Raven* model airplane kit! Includes a completed *Raven* model, an unassembled model, and a teacher's guide.

L755755—$45

PITSCO DR. ZOON RAVEN VIDEO New

"Nevermore," says Dr. Zoon. "Nevermore will kids look at an airplane the same way, after they see my video!" Dr. Zoon doesn't necessarily turn poetic, but he does provide students insight into the construction of the *Raven*, a rubber band-powered balsa airplane! Along with construction steps and tips, Dr. Zoon provides some uplifting explanations of the principles involved in flight including action-reaction, lift, and potential and kinetic energy. Time: 20 minutes.
Level: Middle School-High School

L757056—$24.95

WHITEWINGS PIONEERS OF FLIGHT SERIES

This glider assembly kit has 15 graceful and high-flying models constructed from durable fiber. The kit features seven racer-style gliders and eight flying replicas of the most interesting aircraft in history, including the *Spirit of St. Louis*, P51D Mustang, Clean S.S.T., McDonnell Douglas F-15 Eagle, and more. Flight manual and catapult launcher included.

L753168—$18

WHITEWINGS COMPETITION CONTEST KIT: WHITEWINGS 5000

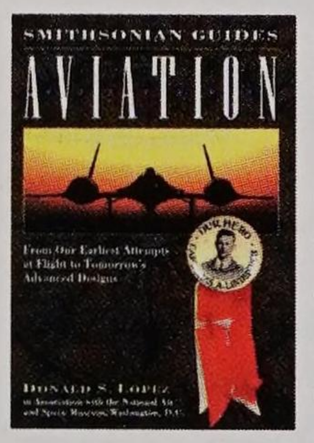
With this kit, your after-school club, youth group, or other group of 16 or more could win $2,500! Get this kit of 30 precut balsa and paper airplanes and enter the Whitewings Paper Airplanes Contest. Kids can discover the science of flight and use their knowledge to make their gliders stay up longer. Kit includes 30 airplanes, 30 student instruction manuals, and two instructor's manuals. For contest information, check out the Web site: www.whitewings.com or call 425-885-4599.

L755564—$44

STAR GLIDER KIT

This simple balsa glider is easy to build and flies great! Balsa material is die cut, so you just carefully punch it out and glue the pieces together. Glider wingspan is 8" and length is 6". Package includes 35 double kits and instructions.

L754496—$39.95
L755520 (8 double kits)—$16.75



SMITHSONIAN GUIDES: AVIATION

If you could have only one book on aviation, then this is it! This comprehensive, easy-to-use guide gives a great overview of aviation. It's chock-full of color photographs and illustrations and well-written text. Includes a full-color, foldout time line of aviation milestones decade by decade. The 40-page, quick-access, A-to-Z glossary includes capsule biographies, special terms, and key concepts. Paperback, 256 pages.
Level: Middle School-High School

L753185—$18

AQUATRAK by PITSCO

PITSCO AQUATRAK New

Add an exciting new dimension to your science curriculum! Help your students float to an understanding of aquatic physics, watercraft design, and the technology of boat building with Pitsco's exclusive new *AquaTrak* – a six-meter boat track that can be used for testing boat-hull designs and timed racing.

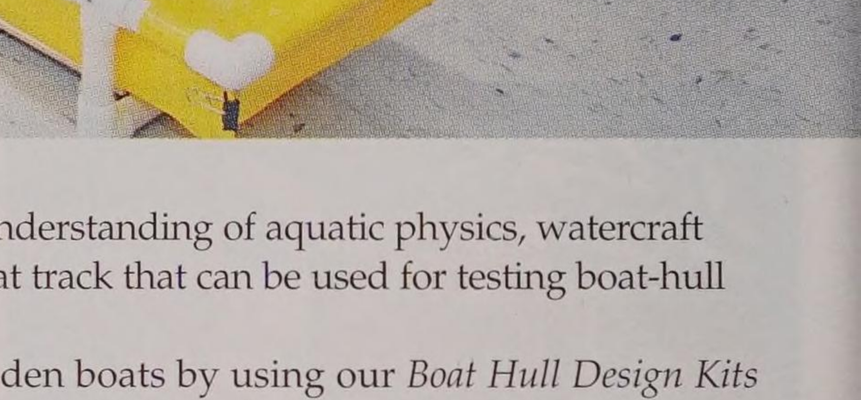
Students in technology, math, design, and physical science classes can build foam or wooden boats by using our *Boat Hull Design Kits* (page 85). With *AquaTrak*, they can analyze their boats' wake patterns in relation to variations in the hull designs. They can learn firsthand the effects of buoyancy and drag and learn how to design a boat to account for factors such as stability and load-bearing capacity. Boats can be timed for racing, or varying weights can be added for testing of power usage.

The *AquaTrak* package includes our new *Boat Design and Testing: From AquaTrak to the Oceans* (page 85). Middle school teachers who use the teaming concept can use *AquaTrak* as a starting point to relate boats and boat transportation across the entire curriculum. The guide includes suggested activities for math, technology, science, social studies, language arts, and even music.

The vinyl *AquaTrak* tank is 38 cm (15") wide and has a 20- to 30-gallon capacity. A depth of 3-4 inches of water is recommended for timed racing or observing wake patterns. The boat is pulled through the water by means of a free fall-weighted pulley system. The *AquaTrak* tank and pulley system are supported by a framework of PVC pipe.

AquaTrak comes partially assembled, with complete assembly instructions. The only tool you need is a hammer (included). The track is designed to sit on the floor. You can leave it standing all year or disassemble it after use (the longest piece is 38 inches). Filling and emptying the AquaTrak tank is fast and easy, using the L756817 *A.T.A.K. (AquaTrak Accessory Kit)*.

L721331—$849.95



While airplanes fly through the air as described by aerodynamic principles, boats 'fly' through the water following hydrodynamic principles. The *AquaTrak* provides both qualitative and quantitative hydrodynamic information about model boats and boat hulls.

Order Online!
www.pldstore.com

New

PITSCO BOAT HULL DESIGN KIT

This basic boat kit contains everything a student needs to make both a foam prototype and a wooden boat for use with the *AquaTrak*. The kit includes one foam block (3-1/2" x 12" x 1-15/16") and one wooden block (3-1/2" x 12" x 1-13/16"), a screw eye and a paper clip (to serve as a boat hook), three grades of sandpaper, grid paper, wax, and an instruction booklet.

L756812—$9.95

New

HULL DESIGNER TOOL SET

The tool kit includes the basic tools needed to construct both the foam boat and the wooden boat in the *Boat Hull Design Kit*.

L756813—$69.95

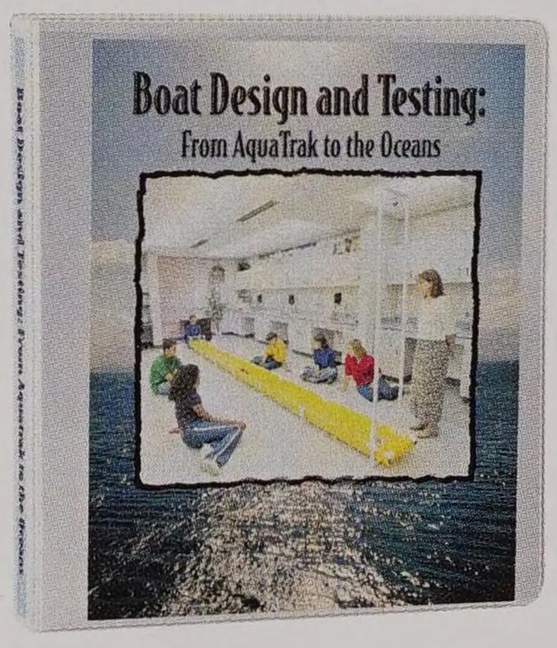
PITSCO BOAT DESIGN AND TESTING: FROM AQUATRAK TO THE OCEANS

New

This exclusive new curriculum relates boats and boating across the entire curriculum! Two fully developed activities using *AquaTrak* incorporate many science, math, and technology principles and include reproducible masters of worksheets, diagrams, and assessment protocols. A third activity, "Cruising the World," involves the entire curriculum, particularly social studies and language arts, as students plan and carry out a world cruise. In addition to the three complete activities, the curriculum includes an introductory chapter with abundant start-up information and a closing chapter filled with enrichment ideas for every discipline. Paperback, 90 pages.

Level: Middle School-High School

L756695—$29.95



New

PANAVISE

The original, all-purpose work-holding unit for industrial and hobby applications. A single knob controls the tilt, turn, and rotate functions of the patented split-ball, allowing 360° rotation, 360° swivel, and 90° pivot. The head has 2-1/2" wide nylon jaws that open to 2-1/4" for a firm, but damage-free grip. Control knob locks the work firmly in any position.

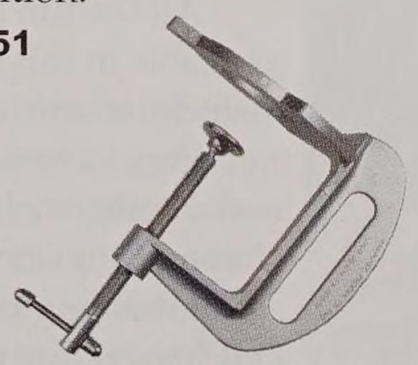
L757635—$51

New

PITSCO A.T.A.K. (AQUATRAK ACCESSORY KIT)

To make filling and emptying your *AquaTrak* tank easier, Pitsco offers the *A.T.A.K.* This kit consists of one 30-gallon tank, two five-gallon buckets, a garden hose, and a pump. The pump will empty the water from your *AquaTrak* into the buckets, into the tank, or down the drain in two minutes or less.

L756817—$275



New

BENCH CLAMP BASE MOUNT

For use with the *Panavise* (above).

L757634—$46

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

AquaPort 74-75
Straw Rocket Launcher. 78-79
Hot-Air Balloon Launcher. 80-81
Kite Explore-A-Pak . . 82
• *AquaTrak* 84-85

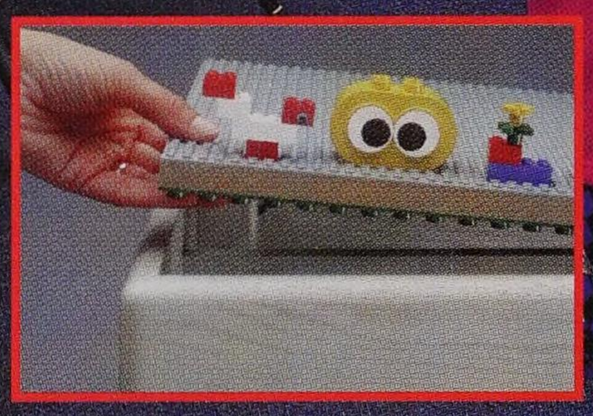
STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

Ideal Classroom Setup
for 24 students

1 - AquaTrak (L721331)
24 - Boat Hull Design Kits (L756812)
1 - A.T.A.K (L756817)
12 - Hull Designer Tool Sets (L756813)

Total: $2,203.15 plus shipping



LEGO DACTA FLIP-TOP PLAYTABLE

Let your students unleash their creativity! The *Flip-Top Playtable* allows them to build with regular LEGO bricks or DUPLO bricks. No tools are necessary to flip the tabletop. Features durable hardwood construction and convenient table height for standing, kneeling, or sitting.

Table measures 27" x 27" x 20" high. Storage bin sold separately.

LARGE RED FLIP-TOP TABLE
L202920—$299.95

LARGE GREEN FLIP-TOP TABLE
L202921—$299.95

PLAYTABLE STORAGE BIN
(17" x 17" x 7-1/2")
L779920—$14.50

LARGE LAMINATED TABLE COVER
L202011—$80.25

LEGO DUPLO BASIC CIRCUS #779063

All the fun and excitement of the circus is available in this set of 312 elements, which includes many basic bricks plus newly decorated bricks featuring clowns and wild animals. It also includes six four-wheeled car chassis, four doors, 12 basic figures, and three small building plates. This set really stimulates children's creative and social skills!

Level: Early Learning

L779063—$86.75

LEGO DUPLO BASIC TOWN #779064

Endless possibilities for building a town with 208 Basic LEGO DUPLO elements. The set includes three small building plates, nine basic figures, four doors, six car chassis, and many decorated elements, plus wings to build a plane or other flying machine. Provides fun and creative challenges for young children.

Level: Early Learning

L779064—$65.50

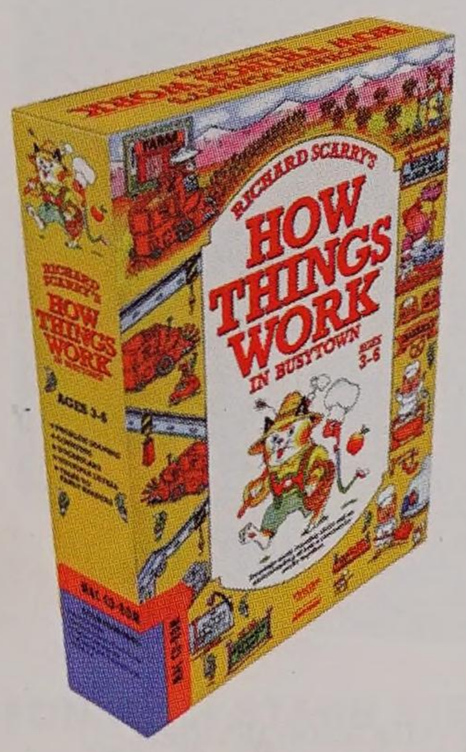
Call Toll Free!
800-362-4308

BONUS LEGO BASIC TOWN SPECIAL VALUE #779287

2,476 elements

Piles of elements to build a fantastic town environment with pretty houses, a gas station, a cafe, even a racetrack with lots of fancy cars or a town with everything a child could dream – an ice-cream booth at every corner, perhaps? Ages 5 and up.

L779287—$110



HOW THINGS WORK IN BUSYTOWN CD-ROM

The popular storybook world of Richard Scarry comes to life in this interactive-learning CD-ROM! With Huckle Cat, Lowly Worm, and other characters, children learn the importance of working together in a community while gaining valuable early learning skills.

They'll participate in a wide range of activities such as building a tractor, harvesting wheat, grinding wheat into flour, and helping Able Baker make bread. Children learn colors and counting, problem solving, word recognition and vocabulary, and community roles.

Level: Early Learning

L755054 Mac/Win CD-ROM—$49.95

BONUS LEGO BASIC TOWN #779248

1,737 elements

Build a whole new community every day with houses and vehicles your students design. This bonus set includes lots of LEGO bricks plus wheels, figures, doors, windows, trees, and decorated bricks. Ages 3 and up.

L779248—$102.50

- *Playtable 86-87*
- *Early Simple Machines. . 90-91*
- *Playwall 94-95*
- *Early Structures Set 96*

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

LEGO DUPLO HOME #779148

107 elements

Home for sale. Prime features: open floor plan with movable walls, completely furnished! Includes eight family members, a vacuum, a dog, a cat, a baby swing and stroller, a tricycle, and a doorbell that really rings.

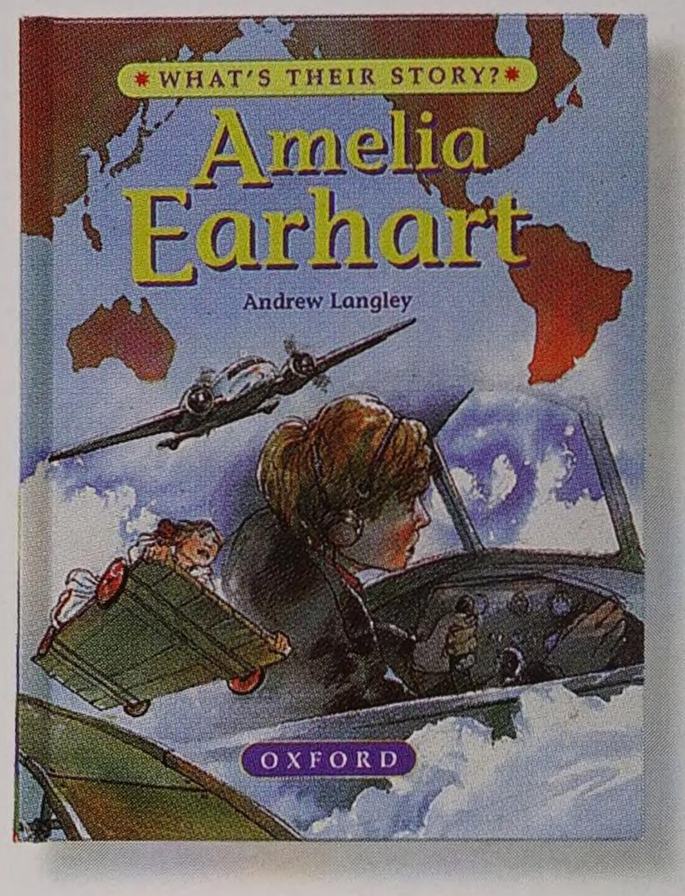
L779148—$84.50

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

LEGO 5+ BASIC AIRPORT #779288
1,371 elements

Destination: Anywhere! Airplanes and helicopters are taking off and landing all day long. This set includes figures, windows, wheels, and propellers and encourages children to reproduce events in daily life as well as build imaginatively. Ages 5 and up.

L779288—$70.75

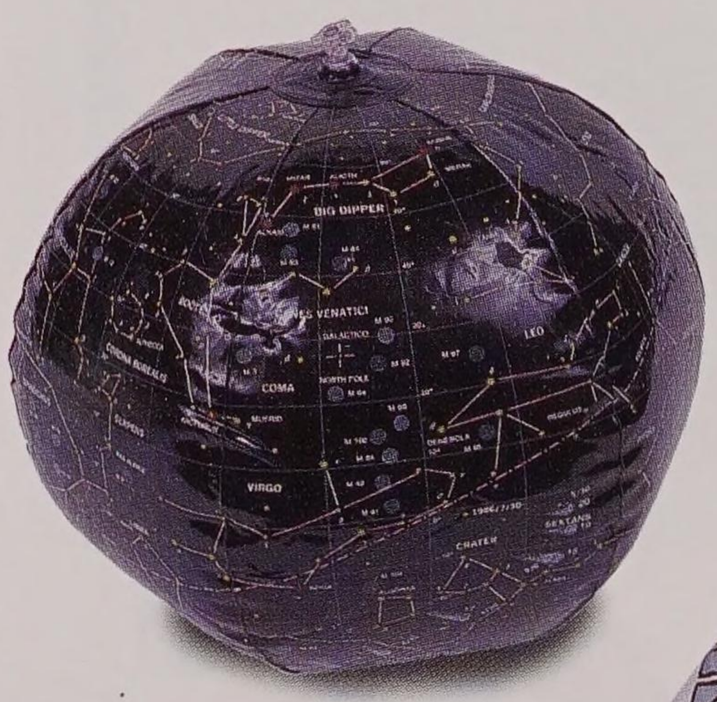


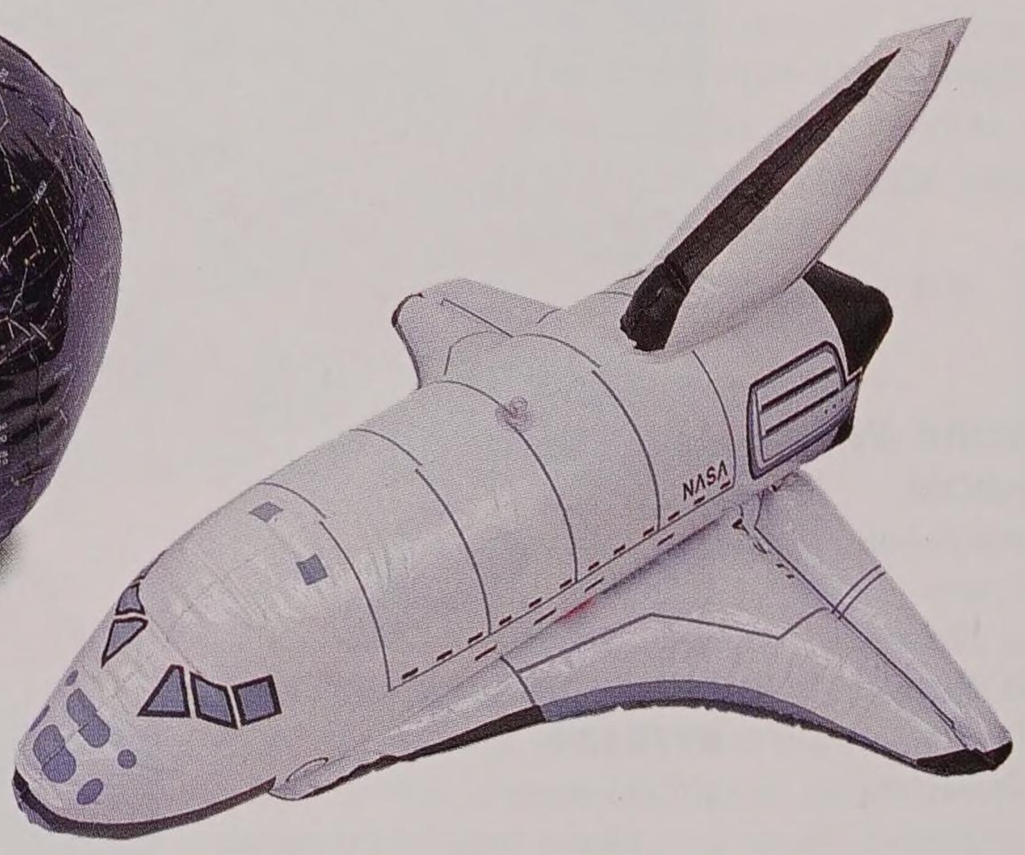
WHAT'S THEIR STORY? AMELIA EARHART

A well-told, beautifully illustrated biography for young readers. Amelia Earhart flew into history through her courage and skill as a pilot. For women she was a shining example of freedom, opportunity, and success. Her story is truly dramatic, from her triumph as the first woman to fly the Atlantic to her mysterious and tragic disappearance over the Pacific. Hardback, 30 pages.

Level: Intermediate-Middle School

L756079—$15.55

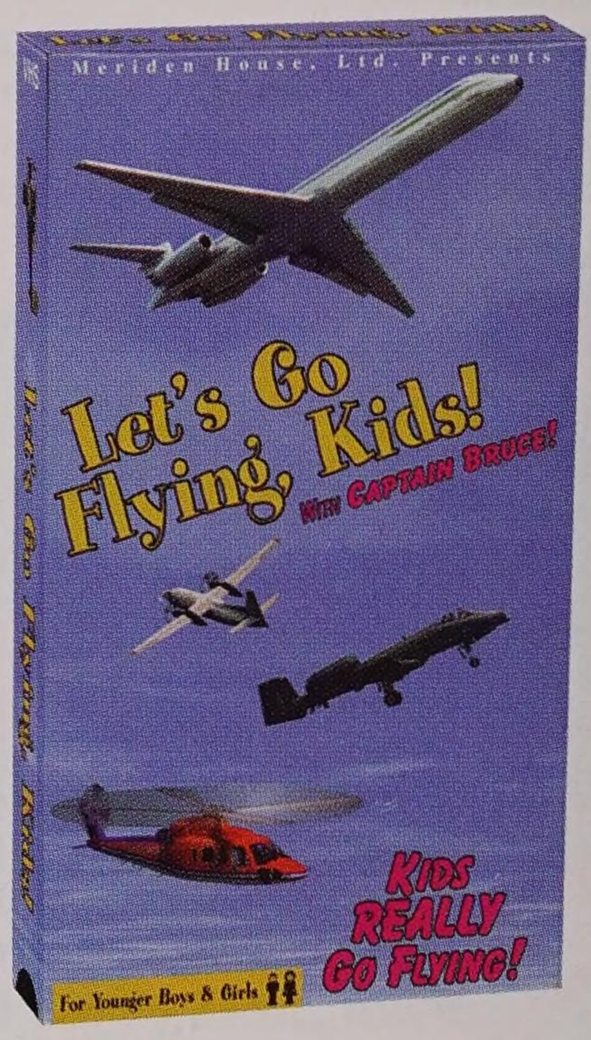




SPACE INFLATABLES

Create a space theme in your classroom by hanging these realistic inflatables. Dimensions given are sizes when filled with air.

L756047 Space Shuttle (26")—$5
L756048 Stellar Globe (16")—$4.95



LET'S GO FLYING, KIDS! VIDEO

The sky is the limit with this fun and educational video. Students will climb aboard with a real airplane pilot and learn all about planes and the people who make them. Host Captain Bruce, an experienced airplane pilot, will show students how a plane flies. Plus, they will see the men and women who work at busy airports and visit a real air show. Time: 30 minutes.

Level: Early Learning

L756073—$20

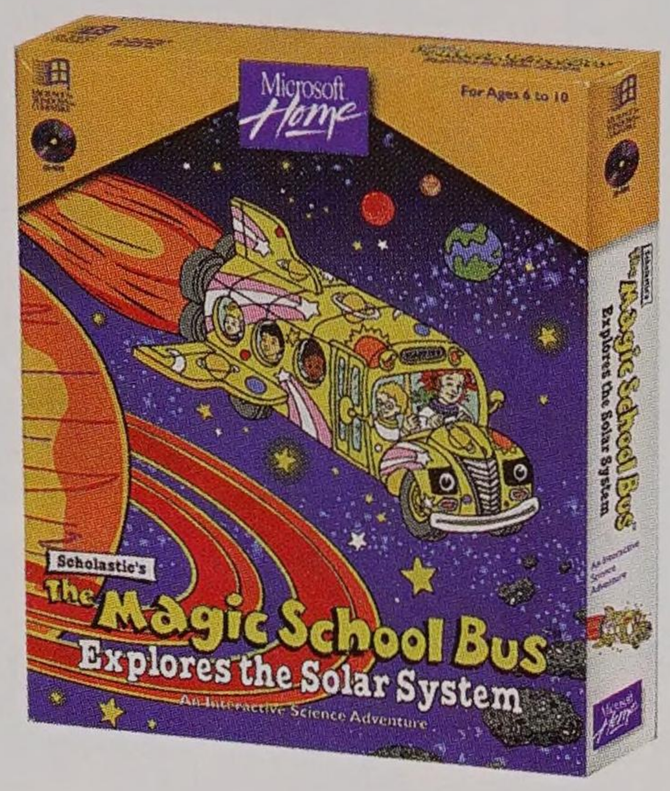
FreeFax™ Orders!
888-534-6784

Playtable. 86-87
Early
Simple Machines. . 90-91
Playwall 94-95
Early
Structures Set 96

LEGO 3+ BASIC AIRPORT #779249
1,161 elements

Build an airport with lots of free scope for the imagination, using LEGO bricks in different shapes and sizes including many special pieces – wheels, doors, windows, propellers, and decorated bricks. Ages 3 and up.

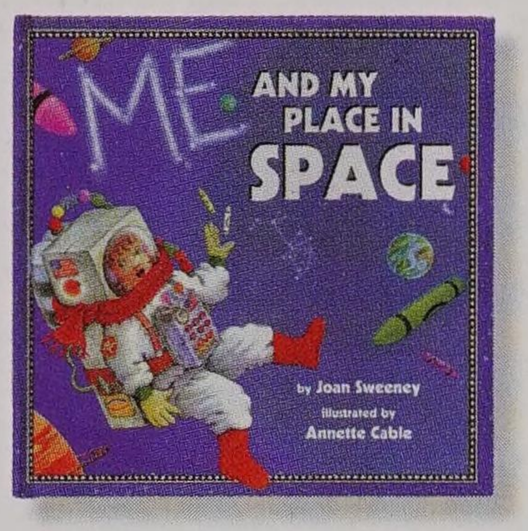
L779249—$88.25



THE MAGIC SCHOOL BUS EXPLORES THE SOLAR SYSTEM CD-ROM

Students will have a blast interacting with this CD-ROM based on the popular TV series *The Magic School Bus*. They journey to the moon or any one of the planets in the solar system and learn cool facts. Nine games and nine science experiments will engage their minds. Show-and-tell multimedia reports make learning fun and science easy to understand. Includes video and images from NASA and the Jet Propulsion Laboratory. Recommended for ages 6 to 10.

L756098 Windows CD-ROM—$29.95



ME AND MY PLACE IN SPACE

A perfect first book to introduce children to space. Colorful, detailed artwork delivers a message that children can understand. Among the terms illustrated and explained in simple sentences are galaxy, Milky Way, moon, planet, solar system, star, sun, and universe. Children will be fascinated by tidbits of information about each planet in our solar system. Hardback, 26 pages.

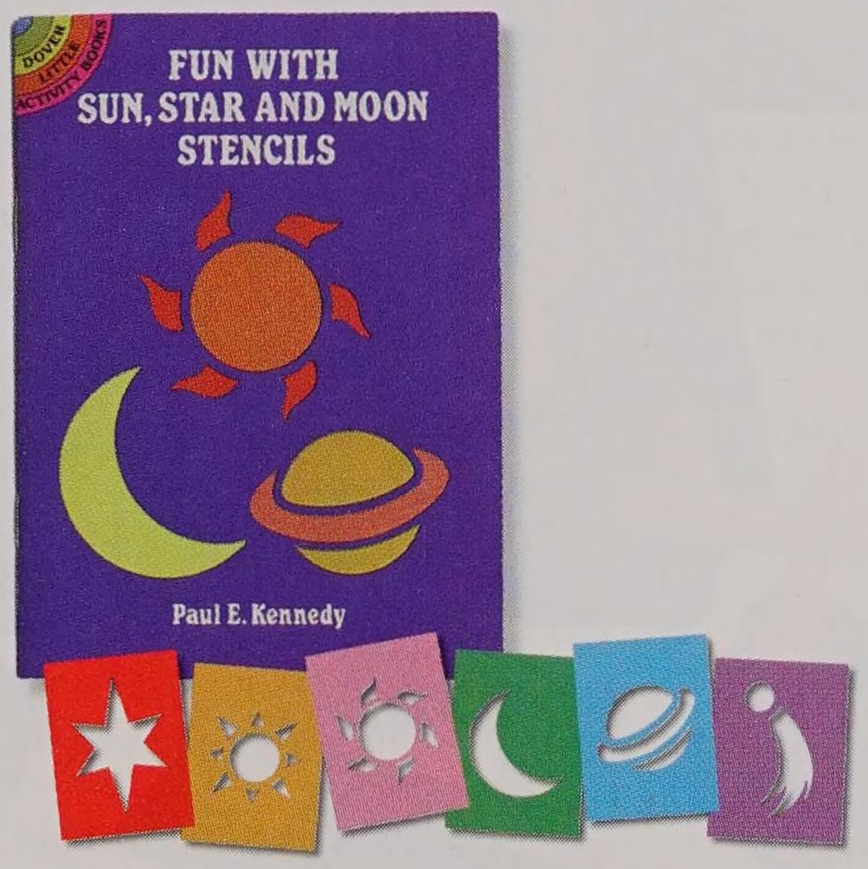
Level: Early Learning

L756083—$13

FUN WITH STARS STENCILS

This dazzling collection of celestial bodies lets youngsters create their own star-studded universes. Six different precut patterns depict a circle of stars, a six-pointed star, five-pointed stars, and other star-shaped motifs. Great for youngsters or adults for decorating purposes. This handy pocket-sized booklet is made of heavyweight, coated stock paper for durability.

L756060—$1



FUN WITH SUN, STAR AND MOON STENCILS

Youngsters can produce their own cosmic universes with this fascinating collection of precut stencils. Six designs: a shooting star, the planet Saturn, a crescent moon, two beaming suns, and a star can be used repeatedly to illustrate science projects or stories or to decorate classrooms.

L756059—$1

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

90 Early Simple Machines

EARLY SIMPLE MACHINES SET #779654

99 DUPLO elements

Young children build fun and simple models, such as a seesaw, rolling vehicle, hand-operated lift, and a merry-go-round. By playing with and manipulating the models, they experience pulleys, levers, gears, and wheels and axles. The set is designed for use by teams of 2-3 children. It includes:

- Full-color activity cards with pictorial instructions for 14 models
- Plastic bin for easy cleanup and storage

L779654—$96

EARLY SIMPLE MACHINES TEACHER'S GUIDE #209664

Designed to supplement the *Early Simple Machines Set*, this 36-page teacher's guide has excellent suggestions for introducing science concepts, hands-on exploration, and thematic activities.

L209664—$21.50

Order Online!
www.pldstore.com

Playtable 86-87
• *Early Simple Machines . . 90-91*
Playwall 94-95
Early Structures Set 96

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html

FUN TIME GEARS SET #779652
32 DUPLO elements

Students explore gears by building three models: a hand-operated paper crimper, top and spinner, and a turntable pattern maker. Students can use the paper crimper and pattern maker to make colorful, creative art projects! The set is designed to be used by a pair of students. It includes:

- 2 full-color activity cards with three projects
- Plastic storage bin

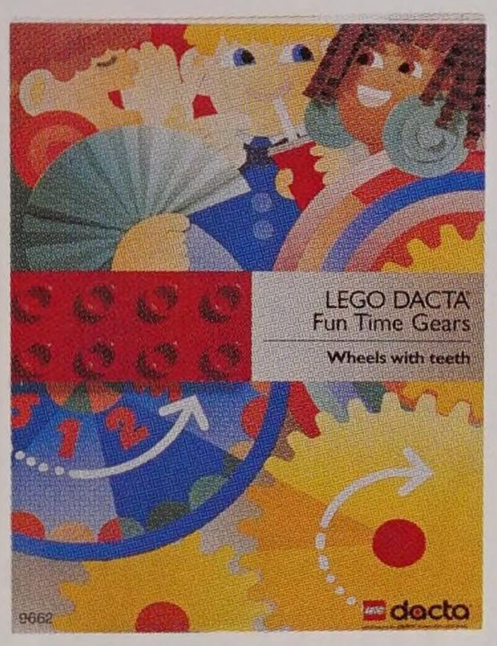
L779652—$43.75

FUN TIME GEARS II SET #779655
46 DUPLO elements

A follow-up to the *Fun Time Gears Set*, this new set allows students to progress even further! *Fun Time Gears II* introduces new key elements, giving a whole new range of models for student exploration. Models include the Drill, Cruncher, Gate, and Bike.

- A pair of students team up to discover gear concepts
- 3 full-color laminated building cards
- Plastic storage bin

L779655—$52.50



FUN TIME GEARS TEACHER'S GUIDE #779662

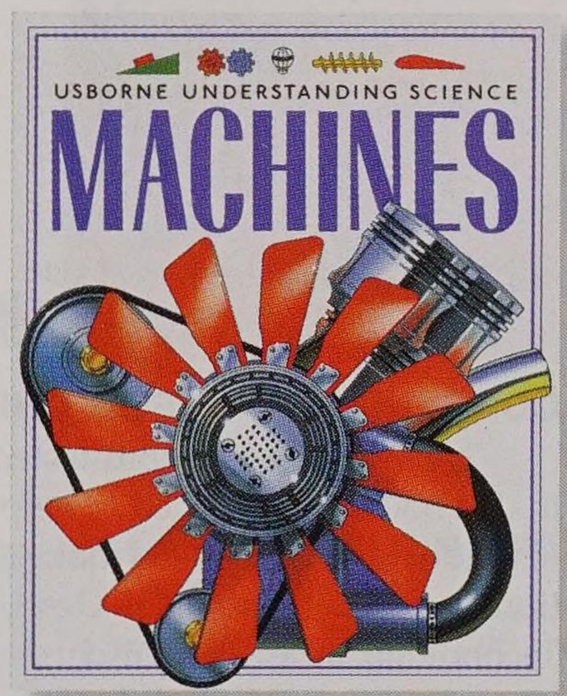
An excellent supplement to the *Fun Time Gears Set*. Contains thematic ideas, science concepts, and methods for discovering gears in everyday machines. Also includes support for the activities, art projects, and more. Paperback, 20 pages.

L779662—$6.25

FUN TIME GEARS II TEACHER'S GUIDE #209665

An excellent 20-page idea book designed to supplement the *Fun Time Gears II Set*. Contains background information about gears and how they are used in the real world.

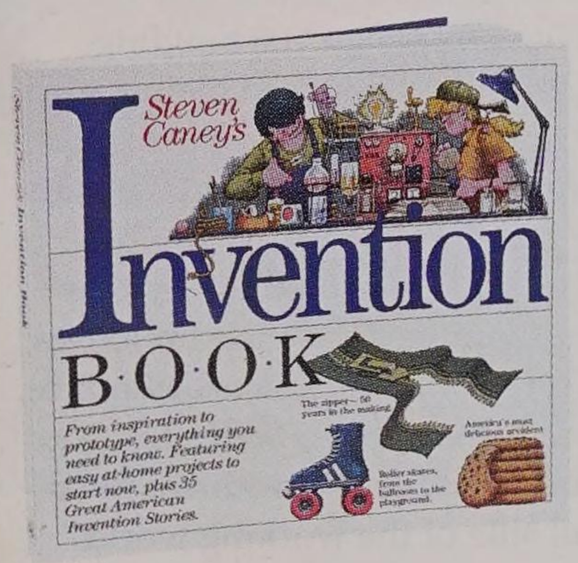
L209665—$6.25



USBORNE: MACHINES

What do a pair of scissors and a satellite have in common? Find out in this fascinating book that explains everything from what machines do to how they help people daily. Includes a glossary of terms and colorful illustrations. Land machines, flying machines, time machines, the human machine . . . they're all included! Paperback, 32 pages.
Level: Intermediate-Middle School

L756061—$6.95

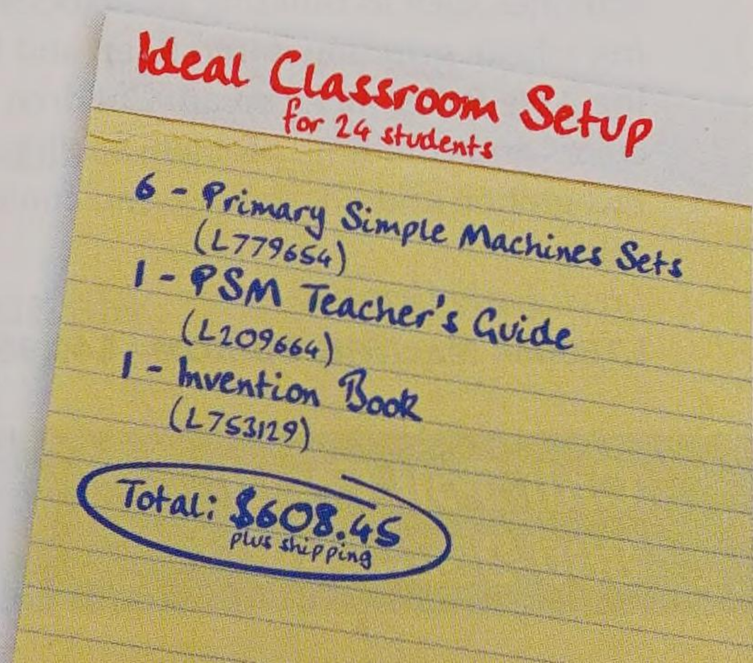


INVENTION BOOK

This book explains each step of the process of being an inventor.

Invention uniquely discusses the fundamentals of setting up a workshop; building models of the invention; creating a name for it; plus record keeping, planning, packaging, and marketing. This book leads students ages 10 and up directly into the world of creativity. Paperback, 207 pages.
Level: Intermediate-Middle School

L753129—$10.95



PITSCO LEGO dacta
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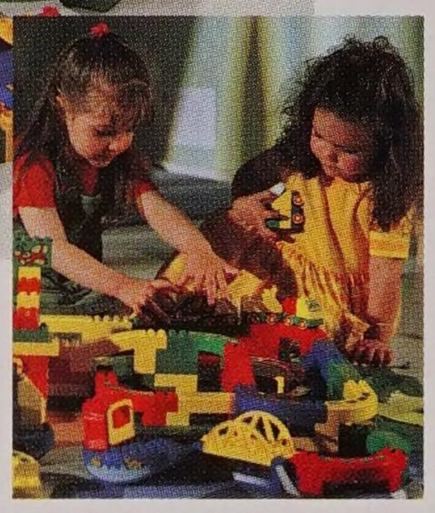


LEGO DUPLO BASIC BRICK RUNNER
#779067
119 elements

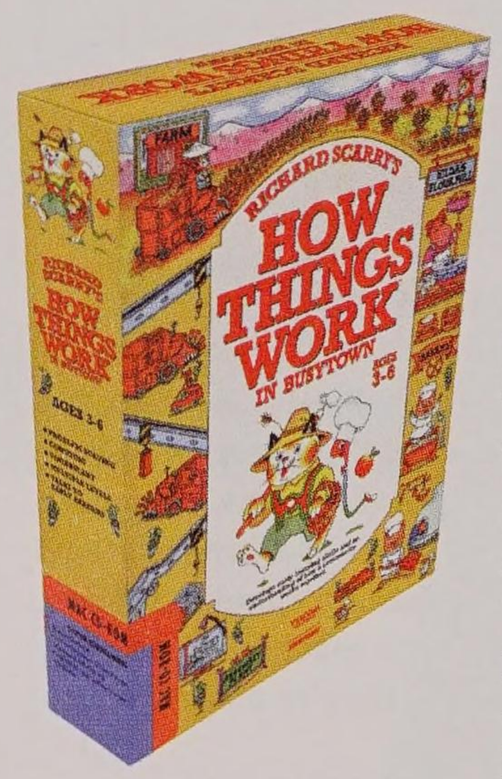
One day a railway, the next day a traffic lane. The *Brick Runner* set has curved and straight rails and can be extended with existing LEGO DUPLO bricks to an endless lane! Includes a bascule bridge, wagons, and a ferry. For children 2 years and older.

L779067—$52

LEGO DUPLO BASIC TUBES
#779087
156 elements

The *Basic Tubes* set includes 32 tubes from which children can create a variety of connectors, slides, and tunnels. They can then watch balls and other elements roll through their creations. The set's elements also include four figures, four balls, two bicycles, and two building plates, as well as basic building blocks. This is a great set for building motor skills through stacking, sorting, and free-form building.
Level: Early Learning

L779087—$64.50

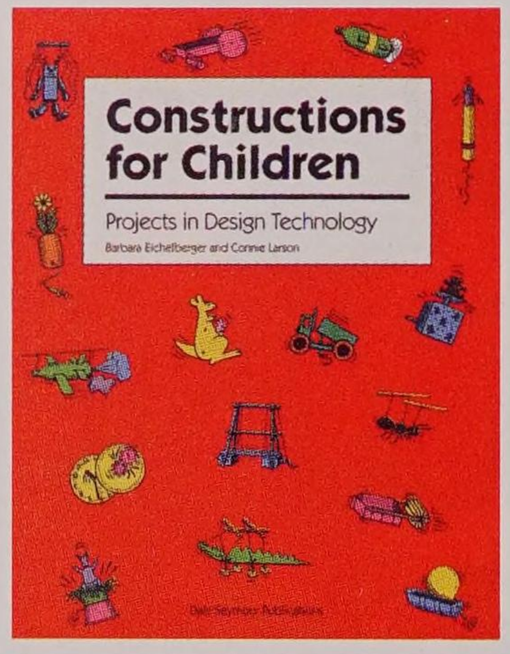


HOW THINGS WORK IN BUSYTOWN CD-ROM

The popular storybook world of Richard Scarry comes to life in this interactive-learning CD-ROM! With Huckle Cat, Lowly Worm, and other characters, children learn the importance of working together in a community while gaining valuable early learning skills.

They'll participate in a wide range of activities such as building a tractor, harvesting wheat, grinding it into flour, and helping Able Baker make bread. Children learn colors and counting, problem solving, word recognition and vocabulary, and community roles.
Level: Early Learning

L755054 Mac/WIN CD-ROM—$49.95

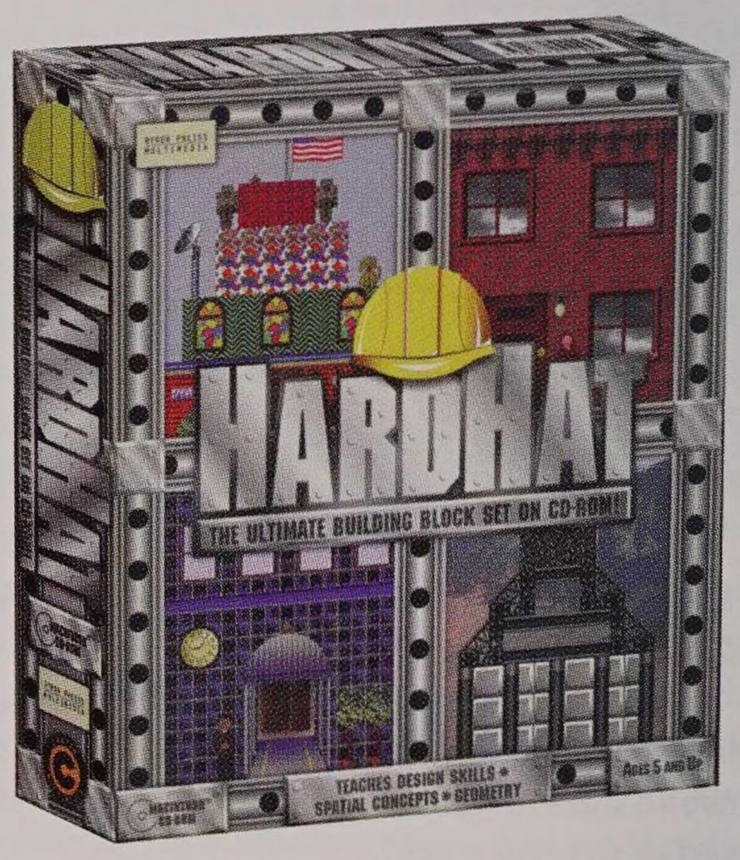


New

CONSTRUCTIONS FOR CHILDREN

The twenty classroom-tested projects in this book are designed to help teachers of students in Grades 1-4 make the educational approach known as Design Technology a part of their curriculum. Students use their natural tendencies to expand and transform everyday materials into imaginative creations based on children's literary themes that include a clock with gears, a marionette ant, and a rubber band-powered airplane. After building is complete, students write about the experience. The entire process develops skills in observation, problem solving, math, science, writing, cooperative learning, and critical thinking. Paperback, 84 pages.

L990481—$12.95



HARDHAT CD-ROM

Primary students punch in on the time clock and get to work creating their own skyscrapers, castles, or anything else they dream up! With more than 100 building materials ranging from brick to plaid and elements ranging from doors to flags to neon signs, kids can create and animate fantastic structures.

When they're finished building, kids can save, print, or demolish their buildings with a wrecking ball, dynamite, earthquake, or even an alien spaceship. *HardHat* is easy for youngsters to use and introduces them to the playful side of the working world. Ages 5 and up.

L756049 Mac CD-ROM—$29.95

Playtable. 86-87
Early
Simple Machines. . 90-91
Playwall 94-95
Early
Structures Set 96

LEGO BASIC HARBOR #779289
1,105 elements

Cast off! Build your own busy harbor with large ocean liners, small yachts, and motorboats. The set includes doors, windows, wheels, figures, propellers, and more.

L779289—$51.75

LEGO SYSTEM TRAFFIC SIGNS #779301
178 elements

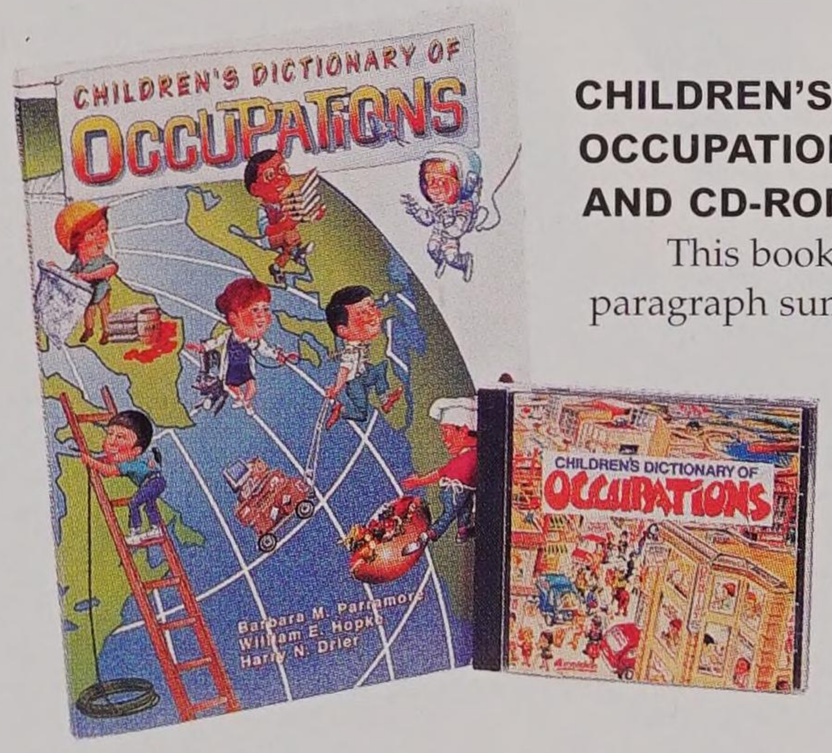
Start road safety and traffic education! Here are 16 various recognizable signs and fences.

L779301—$28.75

LEGO DUPLO FARM #779133
97 elements

This farm comes complete with 18 farm animals, six LEGO DUPLO people, a farmhouse, two tractors, a plow, and plenty of fences.

L779133—$95



CHILDREN'S DICTIONARY OF OCCUPATIONS: THIRD EDITION BOOK AND CD-ROM

This book and CD-ROM provides one-paragraph summaries of the work done in a wide variety of occupations, ranging from fast-food workers to computer programmers to veterinarians. The book's cartoon illustrations add humor, and phonetic pronunciations of even the simplest terms enable younger students to use the book on their own. The "Looking Ahead" section at the back of the book covers resumes, cover letters, applications, and interviews. Children's voices on the CD-ROM make it user-friendly, as well. Paperback, 126 pages.

Level: Intermediate-Middle School

L990202—$99

X-LARGE YELLOW STORAGE BIN #779920
17" x 17" x 7.5".

L779920—$14.50

LARGE RED STORAGE BIN #779921
17" x 17" x 4.5".

L779921—$14

MEDIUM GREEN STORAGE BIN #779922
15" x 12" x 4.5".

L779922—$8

SMALL RED STORAGE BIN #779925
15" x 12" x 2.5".

L779925—$5.75

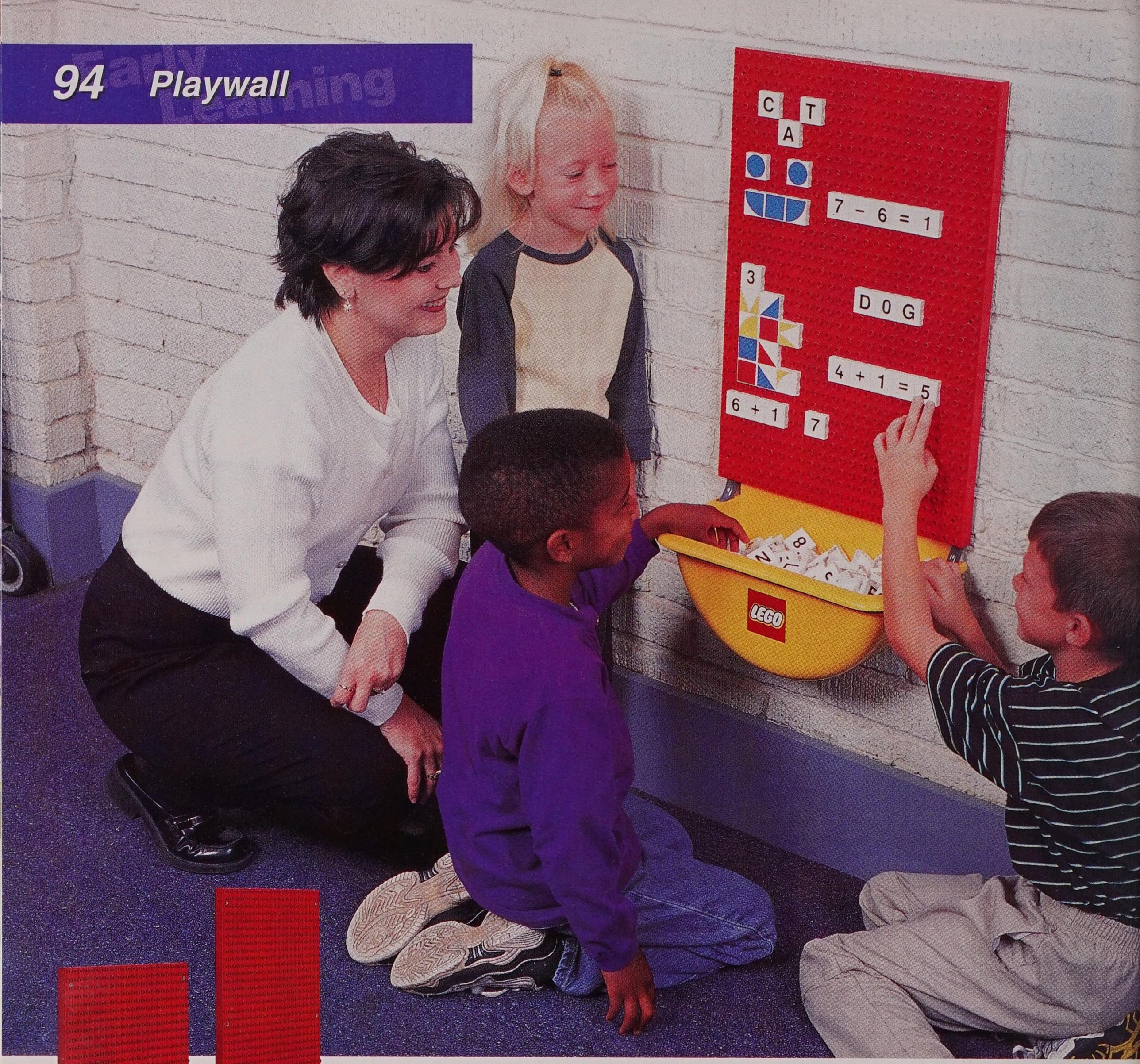
EXTRA SMALL YELLOW STORAGE BIN #779926
12" x 7.5" x 2".

L779926—$4.25

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

94 Playwall

Early Learning



LEGO DUPLO PLAYWALL #779805

These large flat baseplates (77 cm x 38 cm, or about 30" x 15") can be attached to the wall and have storage bins (19 cm or 7-1/2" wide) attached to the bottom to catch falling pieces. They're great for use with LEGO DUPLO *Numbers* and *Letters* (not included), but they can be used with any LEGO DUPLO elements.

Level: Early Learning

L779805 (Set of 2)—$157.50

LEGO DUPLO MOSAICS #779534

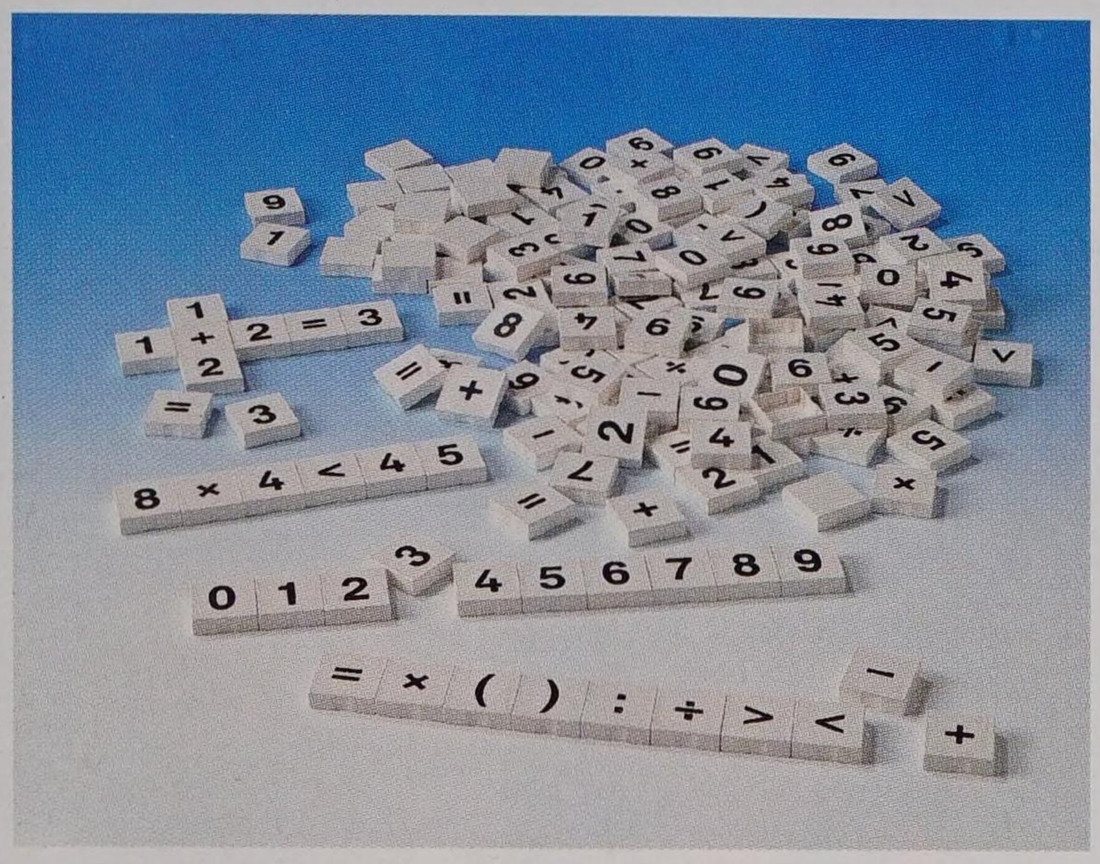
258 elements

This unusual set is perfect for teachers who wish to introduce their students to concepts of two-dimensional geometry (shapes, patterns, and symmetry). The tiles are also ideal for sorting activities and making designs. The set contains 18 blank tiles and 240 geometric tiles, including squares, triangles, circles, quarter circles, and others. Activity cards are included to help teachers plan group activities.

Level: Early Learning

L779534—$64

FreeFax™ Orders!
888-534-6784

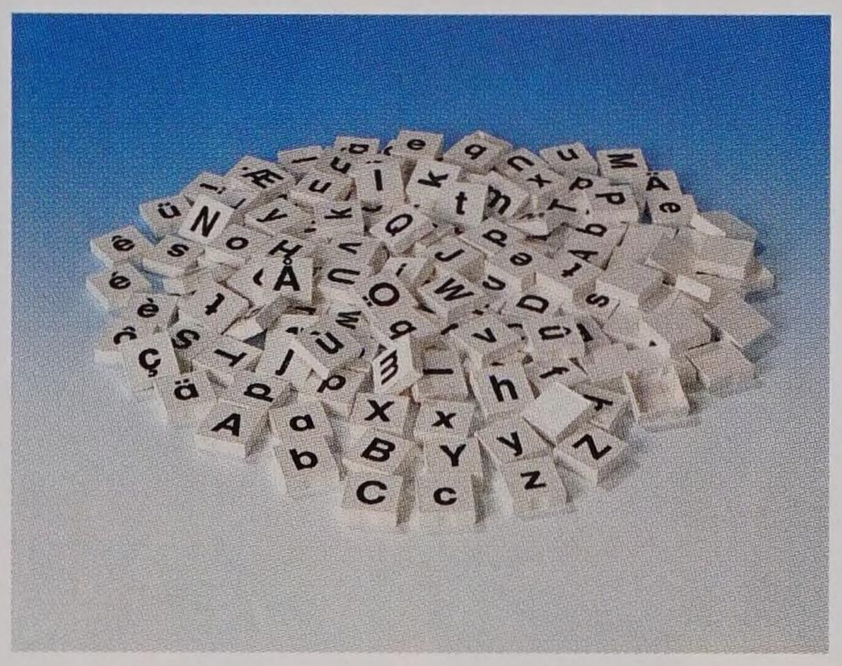


LEGO DUPLO NUMBERS #779533

A set of 168 tiles includes 150 tiles with numbers and mathematical symbols and 18 blank tiles. A wonderful motivator for teaching and reinforcing basic number skills, including both number identification and basic arithmetic functions.

Level: Early Learning

L779533—$42.75



LEGO DUPLO LETTERS #779535

This set of 144 pieces includes 124 tiles with upper and lowercase letters and 20 blank tiles. What a great way to motivate kids to learn letters and words! For convenience, use the letter set with the LEGO DUPLO *Playwall*.

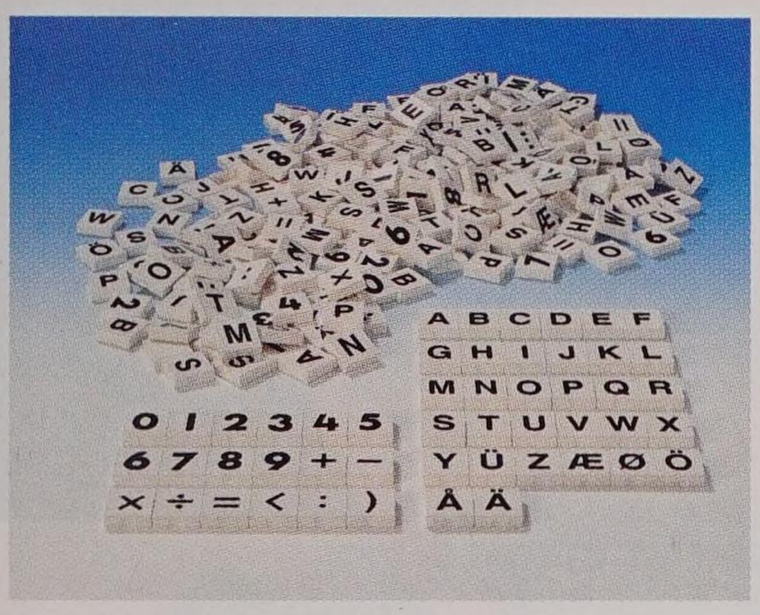
Level: Early Learning

L779535—$57

Playtable 86-87
Early Simple Machines. . 90-91
• *Playwall 94-95*
Early Structures Set 96

STANDARDS

These activities meet or exceed national standards in the areas of math, science, and technology. For information about correlations to standards in your state, contact your regional sales representative or visit our Web site: www.pitsco-legodacta.com/html/standards.html



LEGO NUMBERS & LETTERS #779816

What a great idea! These number and letter blocks will connect to DUPLO building plates and bricks. There are 276 elements – 210 capital letters (including many international symbols) and 66 numbers and math signs.

L779816—$48.75

LEGO DUPLO TRANSPORTATION SET #779124

Kids can build a LEGO DUPLO town from a basic set, and then imitate grown-ups for hours using these community workers and their vehicles. The 31-piece set includes eight figures, six land vehicles (including a garbage truck, a fire engine, a dump truck and a tow truck), a police helicopter, and an airplane. Figures include both men and women in various community roles.

Level: Early Learning

L779124—$43.25

LEGO DUPLO PUSH TRAIN #779139

78 elements

All aboard! Keep on track with this train set. Includes two locomotives and four wagons, along with 32 sections of track, one diamond crossing, one rail crossing, and much more.

L779139—$82.50

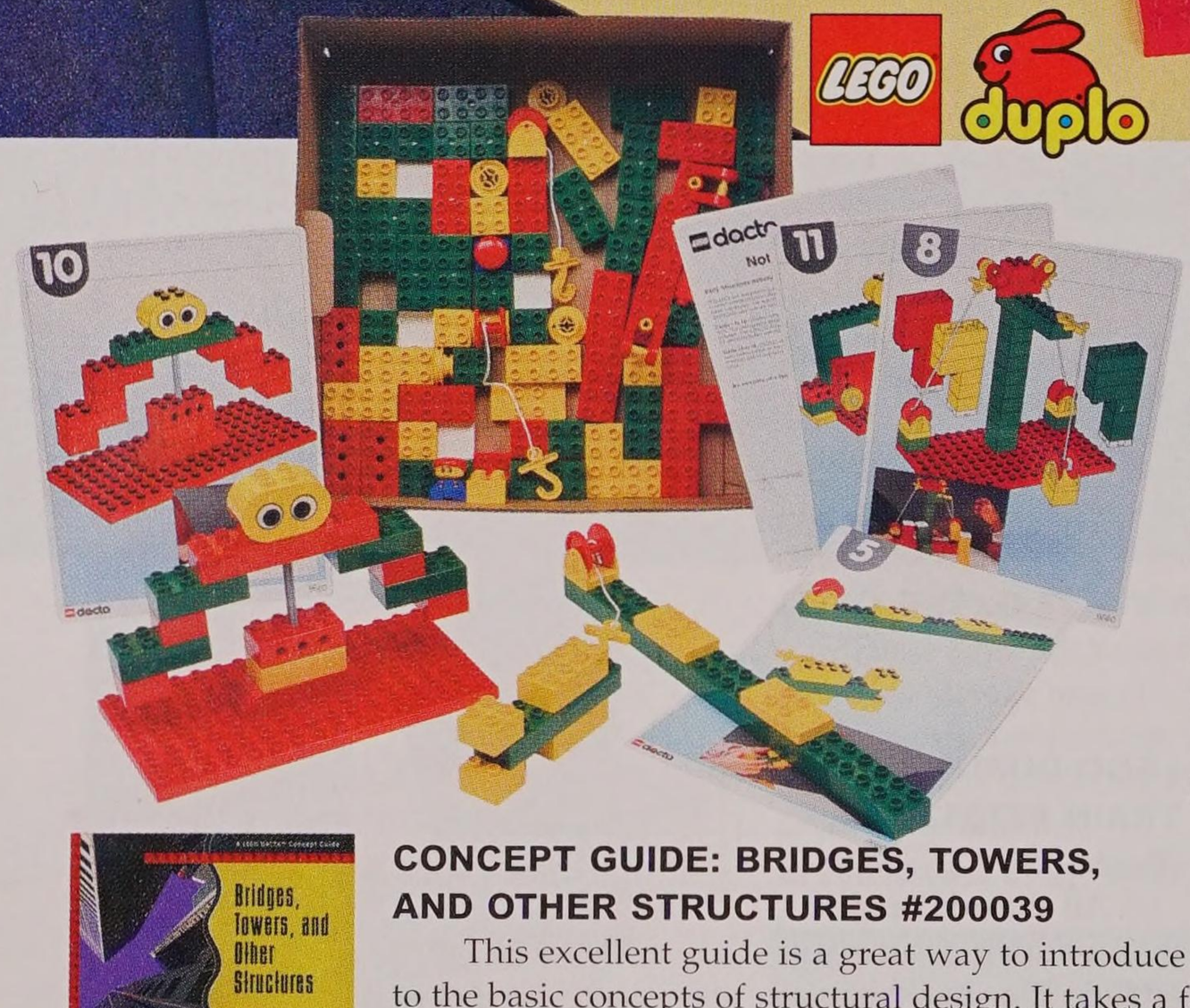
PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

Ideal Classroom Setup
for 24 students

1 - LEGO DUPLO Playwall (L779805)
1 - LEGO DUPLO Mosaics (L779534)
2 - LEGO DUPLO Letters (L779535)
1 - LEGO DUPLO Numbers (L779533)
1 - LEGO DUPLO Basic Medium Bulk (L779065) pg 104

Total: $409.75 plus shipping

96 Early Structures Set



EARLY STRUCTURES SET #779660

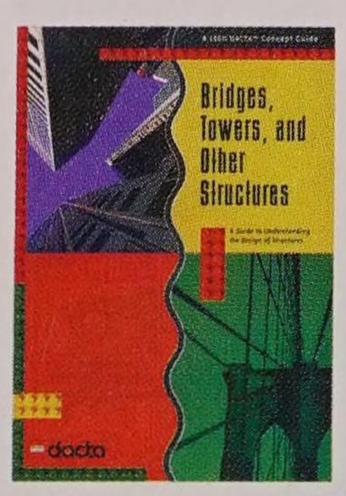
107 DUPLO elements

Students learn basic structure concepts with hands-on exploration! Concepts include balance within structures, ways of building structures, and stability. By building a variety of models children can determine what is the best shape for the job. It's ideal for developing design and problem-solving skills. The set is designed for use by teams of two to three children. In addition to the elements, it includes:

- Teacher's notes with support for 16 activities
- 12 investigation cards for 12 models
- 2 problem-solving cards
- Inventory card

(Storage case not included.)

L779660—$73.75



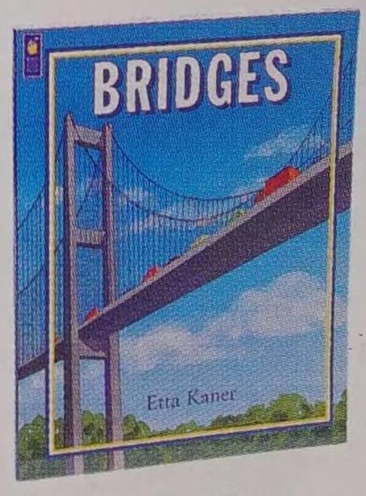
CONCEPT GUIDE: BRIDGES, TOWERS, AND OTHER STRUCTURES #200039

This excellent guide is a great way to introduce students to the basic concepts of structural design. It takes a fascinating look at bridges, towers, skyscrapers, dams, ancient buildings, and even structural elements of nature. Use with the *Early Structures Set* (#779660). Paperback, 23 pages.

Level: Middle School-High School

L200039—$17.50

BRIDGES

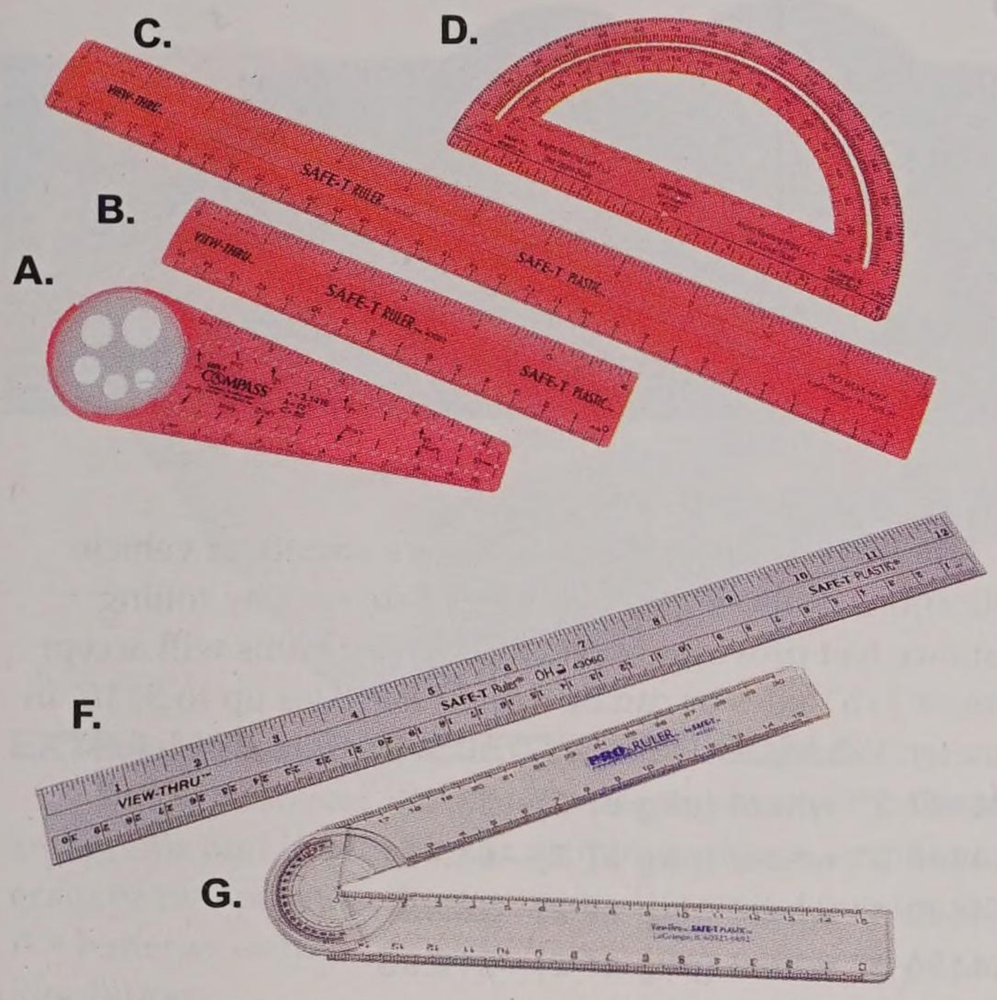


Budding engineers first read a brief description of a type of bridge – beam, arch, suspension, or movable – and then follow the simple instructions to build their own bridges, using simple materials such as paper and tape. Questions lead them in the discovery of basic engineering principles. Paperback, 48 pages.

Level: Intermediate

L990218—$9.95

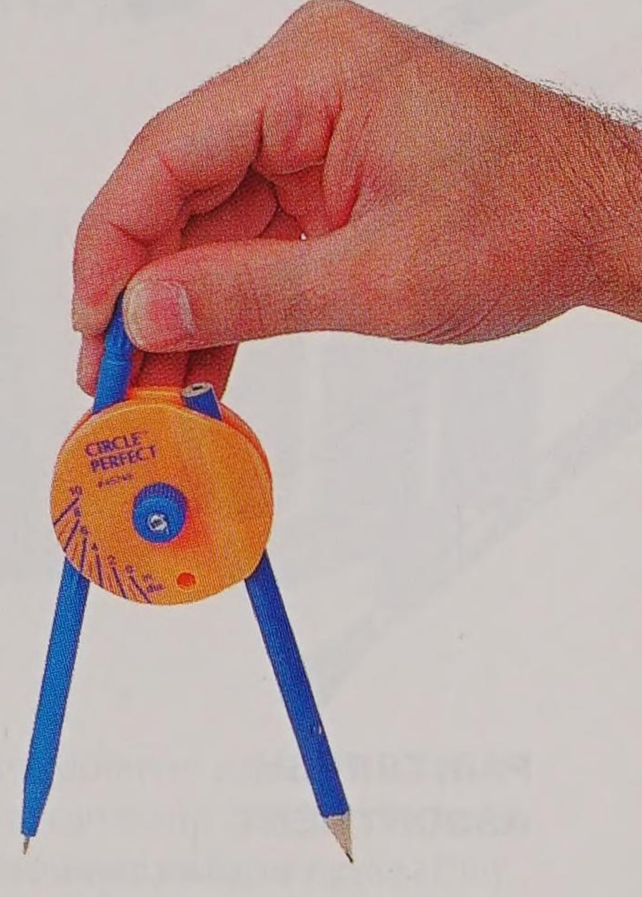
Order Online!
www.pldstore.com



SAFE-T™ DRAWING AND MEASURING INSTRUMENTS

Ideal for classroom use! These pliable, translucent instruments are ultra-safe. They have no sharp points and are shatter resistant. They feature both English and metric units, so they're ideal for use in math, art, science, vocational, and early learning.

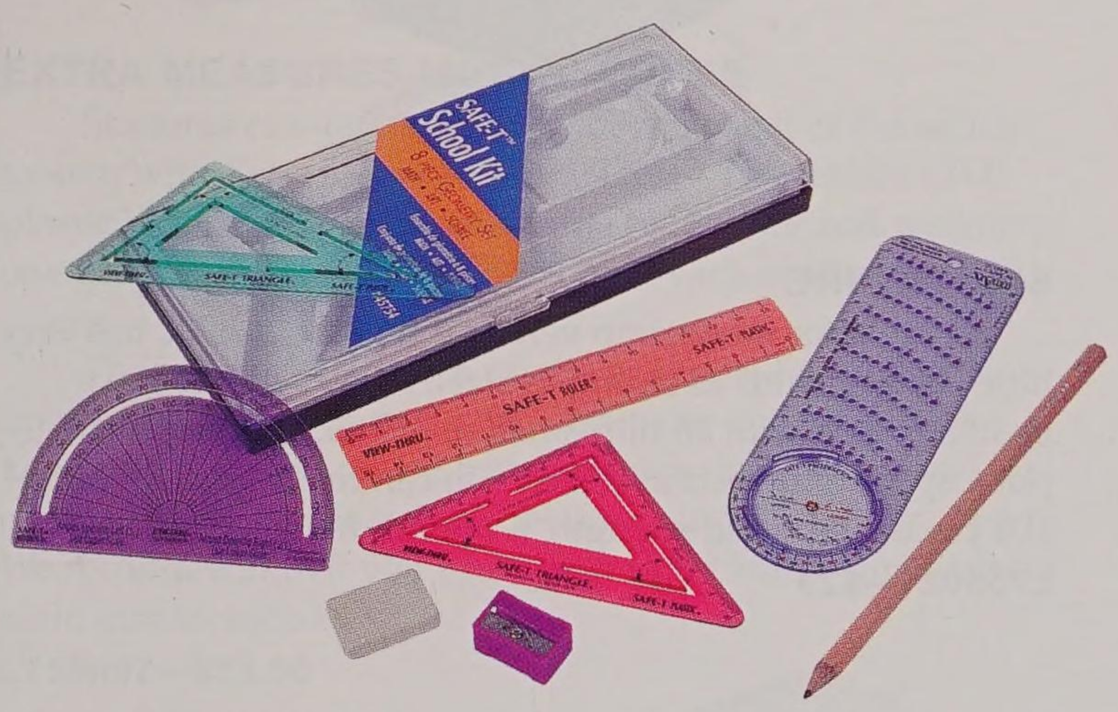
A. Safe-T Compass L756090—$1.10
B. Ruler (orange) 6" L756094—$.50
C. Ruler (orange) 12" L756093—$.75
D. Protractor (orange) 180°/6" L756089—$.65
E. Four-Piece Geometry Set L756085—$2.85
F. Ruler (clear) 12" L756092—$.80
G. Pro Ruler L756088—$3.25
H. Tape Measure L756087—$.95



CIRCLE PERFECT COMPASS

Finally, a compass that's safe and easy enough for younger students to operate, yet precise enough for the most demanding user. The *Circle Perfect Compass* firmly clamps in position to hold the desired radius setting. You can substitute the included pencil for another type of writing utensil, such as a felt-tip marker. The stylus and pencil can be retracted into the shell for safe carrying. One compass draws circles up to 12 inches/15 centimeters in diameter, or you can connect two *Circle Perfect Compasses* to make larger circles.

L756084—$1.95



SAFE-T EIGHT-PIECE GEOMETRY SET

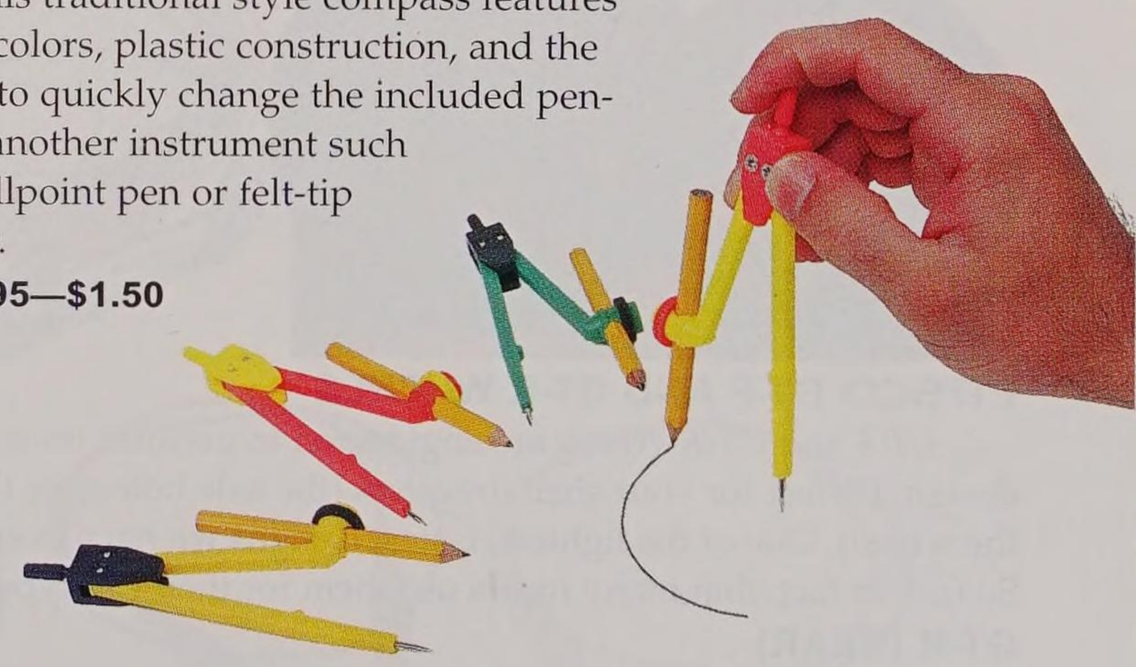
One word comes to mind when you see this kit: *nifty*. That's because all of the compact drawing instruments are thoughtfully designed and fit securely into the dandy snap-lid storage case. The kit includes: a 15-cm ruler, protractor, two triangles, a *Safe-T Compass*, pencil, eraser, and sharpener.

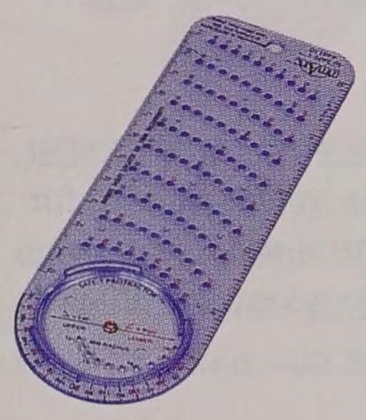
L756086—$5.95

NEON COMPASS

This traditional style compass features bright colors, plastic construction, and the ability to quickly change the included pencil for another instrument such as a ballpoint pen or felt-tip marker.

L756095—$1.50





SAFE-T COMPASS PLUS

The *Safe-T Compass Plus* draws it all: circles, arcs, lines, and angles with ease and ultimate precision. Features the *Safe-T Compass* action with no dangerous sharp points. Constructs circles from 2 to 24 centimeters in diameter on 1-millimeter radius increments. Straight edge sides have inches/metric scales to 4.75 inches/11 centimeters.

L756091—$2.30

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

PAINTBRUSH ASSORTMENT

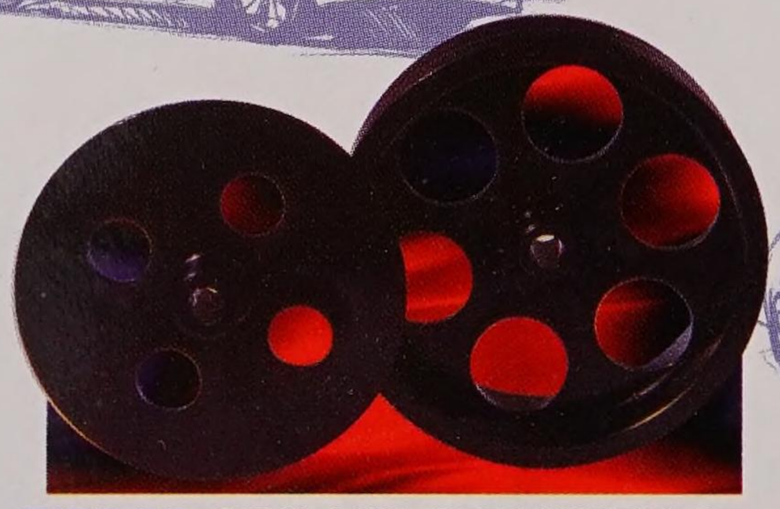
144 craft brushes, sizes 1-6.

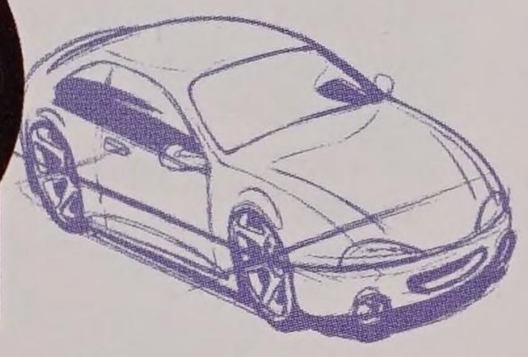
L753469 (pkg of 144)—$11.95
10 pkgs for $107.60

ACRYLIC PAINT 18 PACK (NONTOXIC)

Water soluble, dries quickly. Comes in 1/2-fluid ounce container. Use on paper, wood, and plastic. Color is permanent when dry; cleans with water. Colors include avocado, medium blue, gold, sandalwood, parrot green, shocking pink, flesh, brown, black, purple, brick red, orange, white, lilac, vanilla, yellow, blue, and red.

L753375 (pkg of 18)—$9.95
10 pkgs for $89.60





PITSCO GT-F AND GT-R WHEELS

GT-F and *GT-R Wheels* are engineered to perform on any car design. Perfect for your shell dragsters (the axle hole goes through the wheel). One of the lightest, fastest designs we have ever created. So fast, in fact, that many racers use them for their rail-type cars.

GT-R (REAR)

1-5/8" diameter x 5/8" wide.

L713327 (pkg of 100)—$15

GT-F (FRONT)

1-3/8" diameter x 3/16" wide.

L713330 (pkg of 100)—$12

LITE FLITE WHEELS

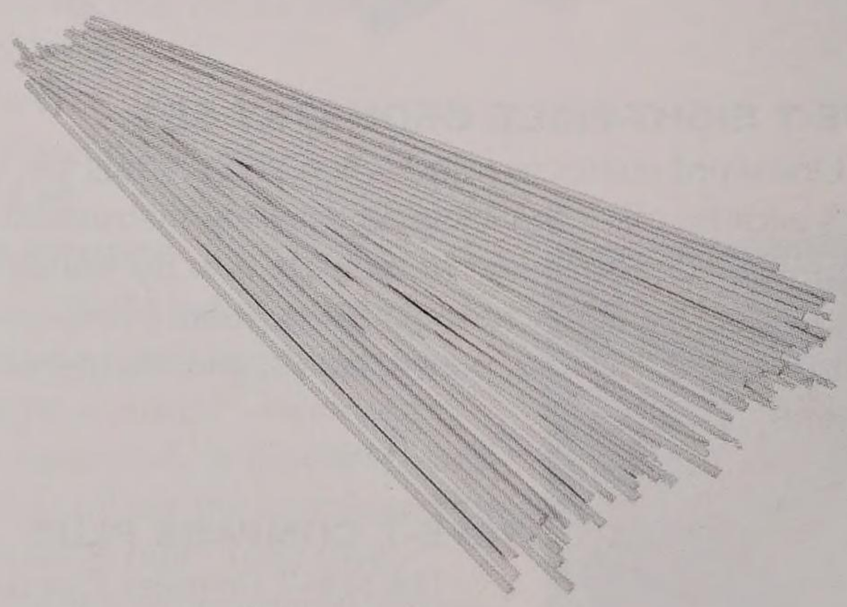
Use these lightweight wheels for a variety of vehicle applications. Rubber tire material is firm for low rolling resistance, yet provides excellent traction. Hubs will accept 3 mm or 1/8" axles or can be drilled for axles up to 3/16" in diameter. Wheels available in 2", 3", 4", and 6" diameters.

L754447 2" wheel (pkg of 2)—$3.75
L754448 3" wheel (pkg of 2)—$4.75
L754449 4" wheel (pkg of 2)—$8.95
L754450 6" wheel (pkg of 2)—$16.95

SPIDERWIRE

A must for mousetrap vehicles! It is soft as silk, has very little stretch, but is as strong as steel. Allows you to have great strength with an ultrasmall diameter. Use *Spiderwire* to put a spin on projects in which you can really get caught up! 100 yards, 20-pound strength, 6-pound diameter test.

L755021—$29



ART STRAWS FOR STRUCTURES

Unwaxed paper straws are 16 inches in length. Use for bridge and tower building and architectural models. Straws make lightweight but strong and durable geometric shapes.

L752843 4 mm (pkg of 1,800)—$29

Call Toll Free!
800-362-4308

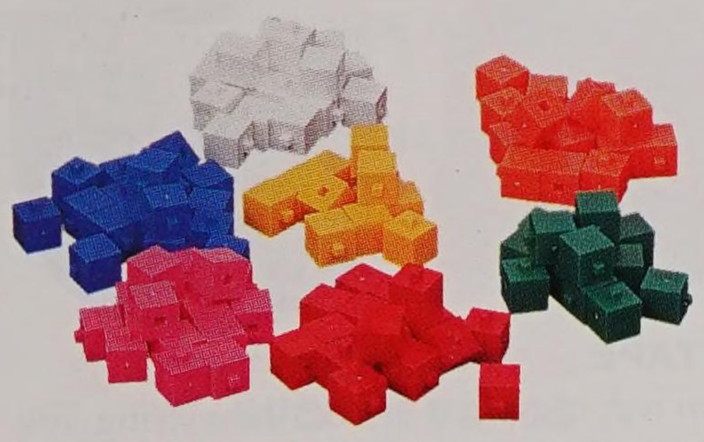
EXTRA MEASURES ELECTRONIC SCALE

This economical, electronic scale measures in both ounces and grams and is suitable for weighing objects up to one kilogram or two pounds, three ounces. The scale operates on four AA batteries only.

Resolution:

- Up to 500 grams @ 1-gram increments
- 500 to 1,000 grams @ 2-gram increments
- Up to 16 ounces @ 0.25-ounce increments
- 16 to 36 ounces @ 0.5-ounce increments

L756096—$75

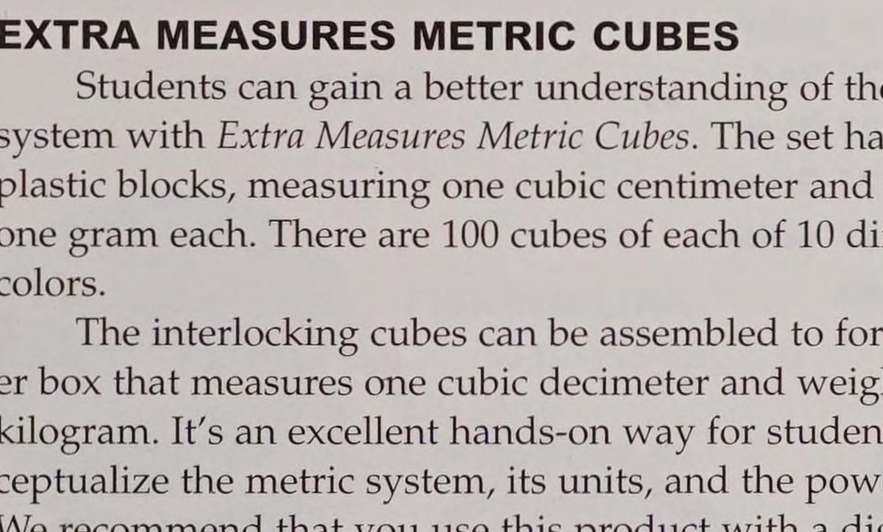


EXTRA MEASURES METRIC CUBES

Students can gain a better understanding of the metric system with *Extra Measures Metric Cubes*. The set has 1,000 plastic blocks, measuring one cubic centimeter and weighing one gram each. There are 100 cubes of each of 10 different colors.

The interlocking cubes can be assembled to form a larger box that measures one cubic decimeter and weighs one kilogram. It's an excellent hands-on way for students to conceptualize the metric system, its units, and the powers of ten. We recommend that you use this product with a digital gram scale (not included).

L756097—$23.50



JERSEY GLOVES

Knit jersey gloves with a snug knit wrist. Great for students ages 8-10!

L756140 Blue—$2.50

L756139 Red—$2.50

MINI GOGGLES

These smaller safety goggles are just right for elementary and middle school students.

L750903—$5.95

10 for $53.60

NICAD BATTERY CHARGER AND RECHARGEABLE BATTERIES

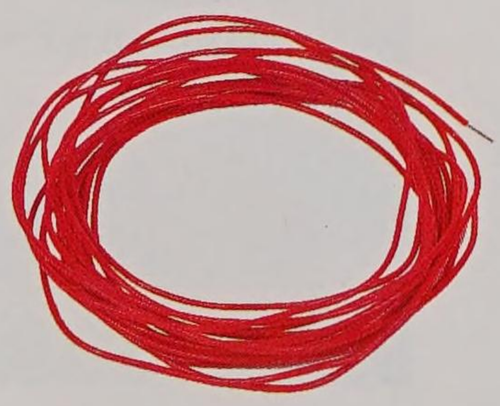
This versatile charger will charge five different sizes of nicad batteries: AA, AAA, C, D, and 9V. The nickel-cadmium cells can be used in hundreds of devices in the place of throwaway alkaline cells. They can be charged and recharged over and over again, saving you hundreds of dollars in disposable batteries. Battery life will vary according to battery size, device, and use. Works well with LEGO Dacta products – the *RCX* brick and *Amusement Park Set* use six AA cells and one nine-volt cell.

L712514 Battery Charger—$17.50

L712515 AA battery (pkg of 2)—$5.75

L712516 C battery (pkg of 2)—$9.75

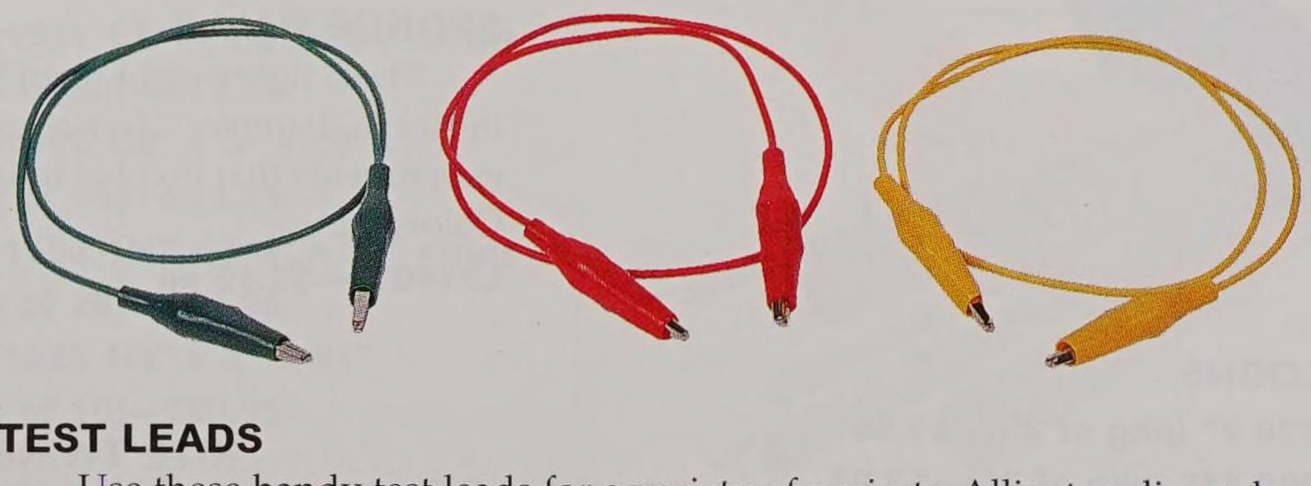
L712517 9V battery (pkg of 1)—$9.75



RED ELECTRICAL WIRE

For general circuit connections. Insulated, 22 gauge, 10-ft lengths.

L756142—$1.50

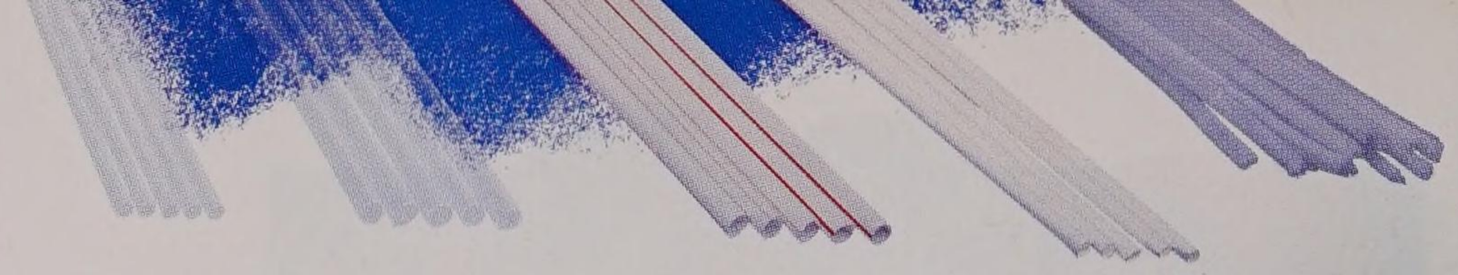


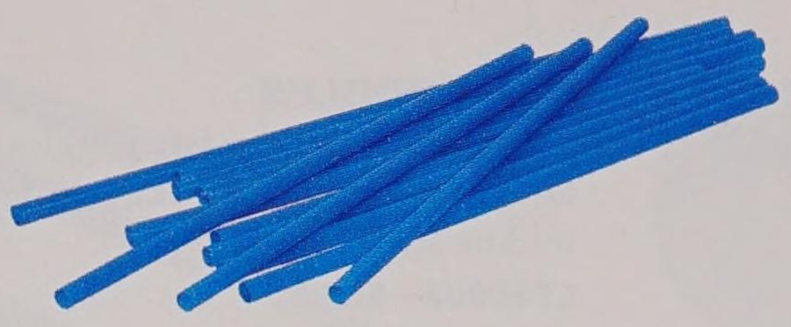
TEST LEADS

Use these handy test leads for a variety of projects. Alligator clip ends ensure a positive connection. 24" long, 10 assorted colors.

L756197—$6.50

100 Parts





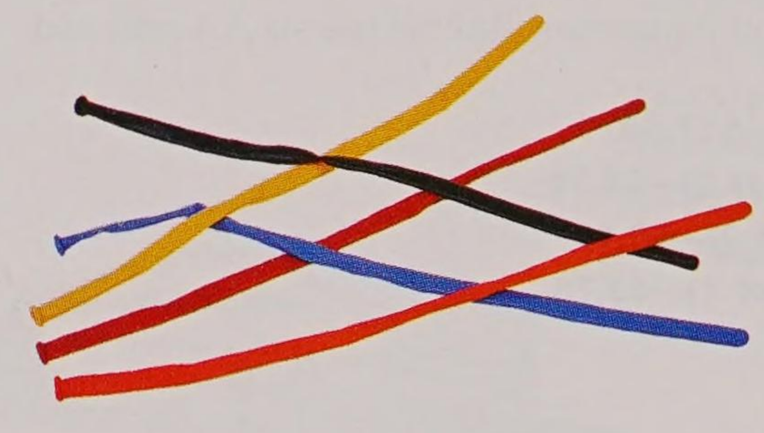
NEON BLUE PLASTIC STRAWS

Use these straws to build hundreds of structures, from bridges to balconies! Straws are 7-5/8" long and approximately 1/4" in diameter.

L756820 (box of 250)—$4

BRADS

L756135 (pkg of 100)—$3.95



LONG BALLOONS

2" x 60".

L756137 (pkg of 25)—$3.50

BALLOONS

L756138 9" (pkg of 25)—$3.95

L751965 11" (pkg of 25)—$3.95

ART STRAWS FOR STRUCTURES

Unwaxed paper straws are 16 inches in length. Use for bridge and tower building and architectural models. Straws make lightweight but strong and durable geometric shapes.

L752843 Art Straws, 4 mm dia (box of 1,800)—$29

PIPE CLEANERS

One of the innovative folks here at Pitsco thought of a new way to attach straws together for structures – pipe cleaners. Try it, you'll like it. Colors may vary.

L754853 (pkg of 100)—$3

PLASTIC STRAWS FOR STRUCTURES

Use for bridge- and structure-building competitions and activities. 7-3/4" in length.

L753334 Clear, 1/8" dia (box of 500)—$4

L715909 Clear, 1/4" dia (box of 500)—$4

L715910 White/red stripe, 1/4" dia (box of 500)—$4

LONG STRAWS

Use for classroom building projects. Clear straws are 10" long and approximately 1/4" in diameter.

L756856 (box of 500)—$5

MASKING TAPE

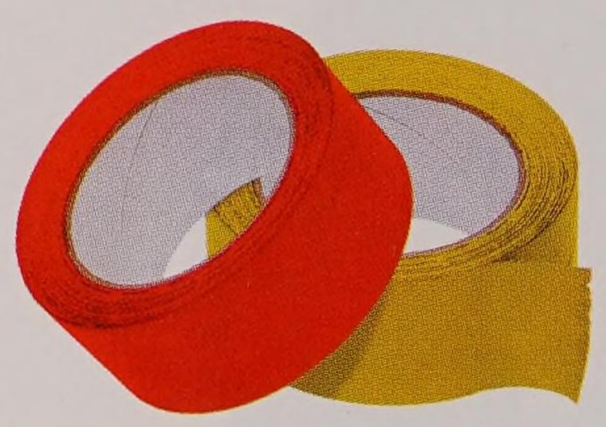
1 inch x 60 yards.

L751962—$1.25 ea

DOUBLE-STICK TAPE

Use this double-stick tape to hold project parts together. Roll is 3/4 inch x 36 yards.

L753630—$6.50



VINYL DUCT TAPE

Choose from red, blue, green, or yellow. 50 yds. x 2 in.

L757722 Red

L757723 Blue

L757724 Green

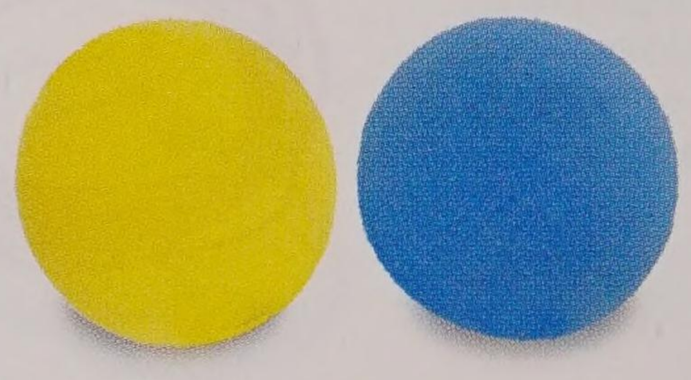
L757725 Yellow

$9.95 ea

LIGHT TWINE

Cotton string, roll of 430 feet.

L753916—$2



SPONGE BALLS

These lightweight foam balls are three inches in diameter. They're great for experiments that involve rolling motion. Colors vary.

L714016—$1.15 ea

HOOK-AND-LOOP FASTENER

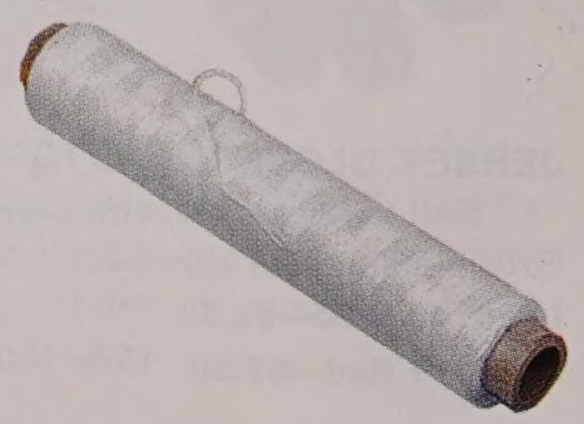
Great for a multitude of applications! One 10-foot strip of each material. 3/4" wide.

L751974—$22.95

KITE TWINE

Polyester/cotton, roll of 300 feet.

L751912—$2



FreeFax™ Orders!
888-534-6784

COLORED STRUCTURES GLUE

Pink, green, and blue glue is a hit with teachers and students alike. Specially formulated for student-engineered wooden structures.

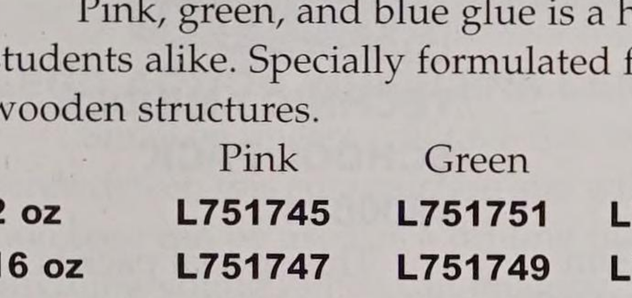
	Pink	Green	Blue	
2 oz	L751745	L751751	L751746	$1.25 ea
16 oz	L751747	L751749	L751748	$3.50 ea

10 of 2 oz (one color) for $11.30

10 of 16 oz (one color) for $31.50

EMPTY TWO-OUNCE GLUE BOTTLES WITH SPOUTS

L752058 (pkg of 25)—$9.95



RUBBER BANDS

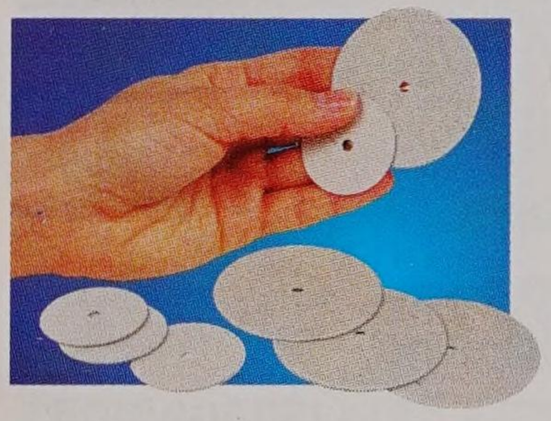
Variety pack. 1/4-pound box.

L750291—$2

FISHING LINE

50-pound test. 110 yards.

L751817—$2.50



CARD WHEELS

These wheels are great for various vehicles, including mousetrap cars and paper cars. Made of sturdy card-stock material, they feature low rolling resistance. Pack includes 1,008 wheels, 504 each of 1-1/2" and 2-1/2" diameters. Inner diameter is 3/16".

L755035—$25

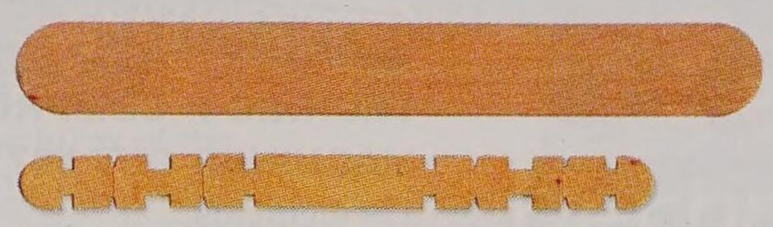
L751945 Hardwood Dowel (36" x 3/16")—$.25

100 for $22

HD BOND ADHESIVE

This revolutionary new adhesive has excellent properties for structures and other applications. It dries quickly and provides a strong, flexible bond. It is nontoxic, nonpenetrating, and dries clear. Two-ounce squeeze bottle.

L754618—$1.95



SKILL STICKS

Skill Sticks are notched craft sticks used to produce many fun projects. They are all alike but can be snapped into six various combinations. No cutting is required.

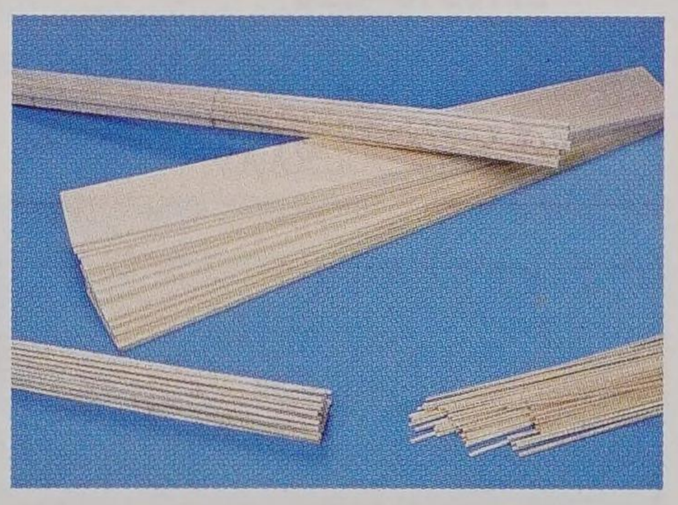
The sticks are 4-1/2" long x 3/8" wide. Ideas and instructions are included.

L750456 (bag of 1,000)—$9.95

WIDE RUBBER BANDS

Approximately 1/2" width x 2" length.

L756136 (pkg of 50)—$1.95



BASSWOOD PIECES

For various projects.

L751591 1/8" x 1/8" x 24" strips (qty of 50)—$11.50

L751592 1/8" x 3" x 24" (qty of 15)—$23.25

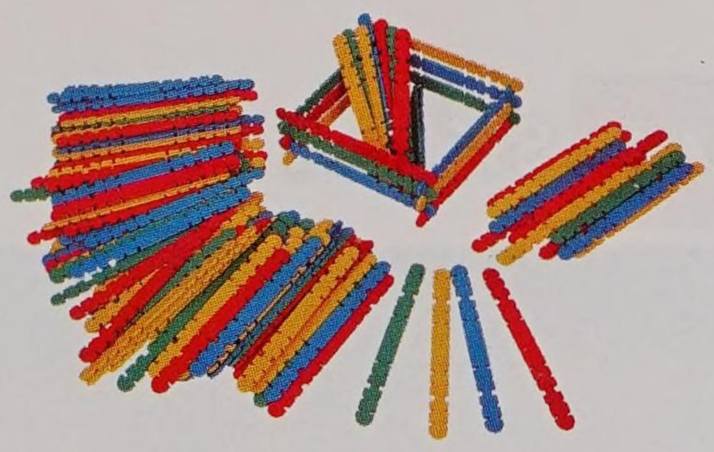
L751593 1/4" x 1/4" x 24" strips (qty of 20)—$10.95

L751625 1/4" x 3" x 24" (qty of 10)—$20.95

WOODEN COFFEE STIR STICKS

An inexpensive material for construction activities.

L756134 (box of 1,000)—$3.95



COLORED CRAFT STICKS

L756810 (pkg of 150)—$2.95

JUMBO CRAFT STICKS

6" x 3/4" x 1/12" craft sticks. Use to create many different items.

L753725 (bag of 75)—$2.95

DOWELS

Quality hardwood dowels, 36" long.

L753508 1/8" dia—$.20
100 for $18
L751945 3/16" dia—$.25
100 for $22
L753474 1/4" dia—$.30
100 for $27
L753475 5/16" dia—$.40
100 for $36
L753476 3/8" dia—$.50
100 for $45
L753477 1/2" dia—$.75
100 for $68
L753478 5/8" dia—$1.15
100 for $104
L753479 3/4" dia—$1.40
100 for $126
L753480 1" dia—$2.15
100 for $194

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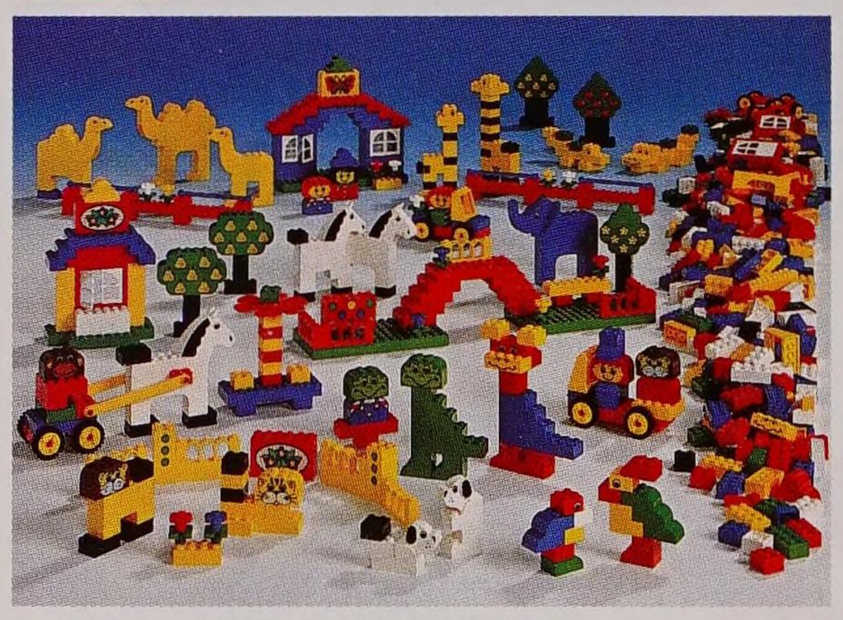
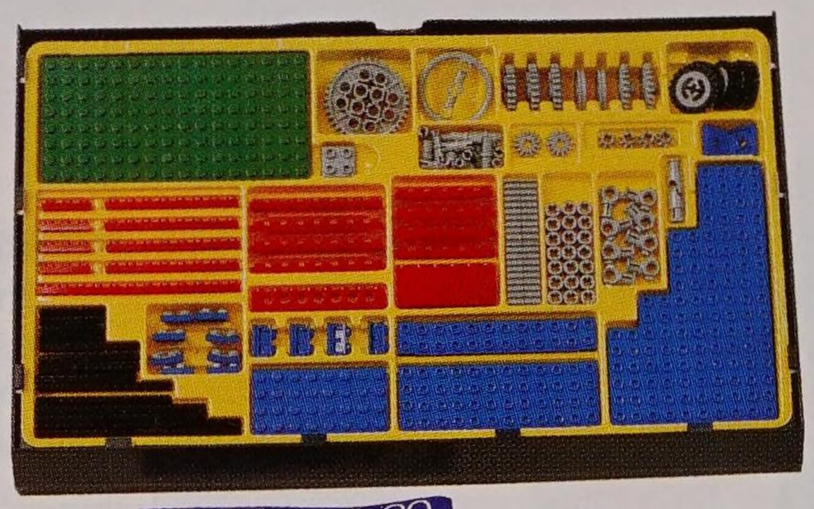
LEGO SYSTEM



LEGO BASIC ZOO #779250
986 elements

Terrific! An entire zoo with possibilities for constructing funny fantasy animals or animals from the natural world. Children have everything they need to reproduce what they see and can create their own imaginative models.

L779250—$67.75



TECHNIC I: COMPREHENSIVE SIMPLE MACHINES SET #971030
179 elements

This set is intended to expand on the basic simple machines principles introduced by the TECHNIC Mini Sets. By building and manipulating models, students investigate the properties of simple machines. The set is designed to be used by students working in pairs. It includes:

- Gear racks, universal joints, wheels, and piston rods
- 20 step-by-step building cards
- Pictorial instructions for 29 models
- Photos of 23 additional challenge models
- Compartmentalized storage tray with clear lid for easy classroom management

L971030—$75

TECHNIC I MIDDLE SCHOOL PACK #900024

This special pack is designed for the modular approach, but also works to jump-start a class collection. The pack includes:

- 5 *TECHNIC I Sets* (#971030)
- AIMS Foundation book titled *Brick Layers: Creative Engineering with LEGO Constructions* (#770918)

D900024—$400

BRICK LAYERS: CREATIVE ENGINEERING WITH LEGO CONSTRUCTIONS #770918
L770918—$25

LEGO SYSTEM

LEGO SYSTEM COMMUNITY WORKERS #779293
178 elements

Every LEGO town needs firefighters, police officers, ambulance paramedics, and construction workers with their tools. Thirty LEGO figures and six cycles and motorbikes can be built with the elements included in this set.

L779293—$34

LEGO SYSTEM

LEGO SYSTEM ROOF TILES #779265
250 elements

This set includes roof tiles in five different shapes. Children can build roofs, pyramids, and much more.

L779265—$28.25

LEGO SYSTEM

LEGO DOORS AND WINDOWS #779274
260 elements

With additional doors, windows, and shutters in your LEGO collection, every child can give that house the perfect finishing touches. Possible to make 70 windows and 30 doors.

L779274—$28.25

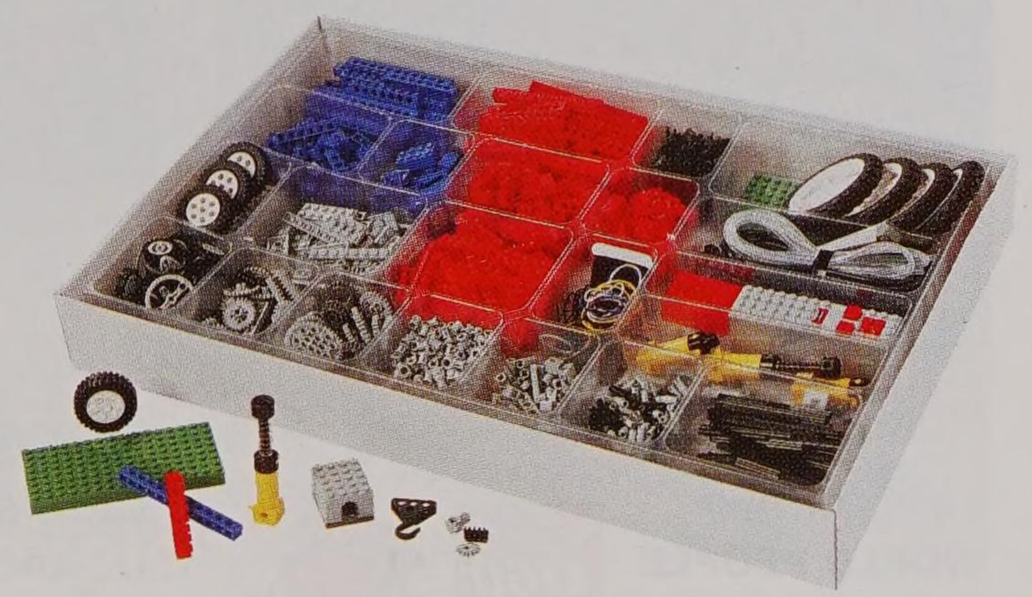
Order Online!
www.pldstore.com

LEGO ACTION WHEELERS LARGE SET #779200 New

Small engineers will love this 98-element set! After a few turns of the screwdriver, this construction site will swarm with activity. The big construction base can be used as a drilling platform, an island, a heliport, or just about anything young minds can imagine. Your classroom floor will be "under construction" in no time at all! We recommend the LEGO DACTA extra-large storage bin, sold separately (page 93).

L779200—$102

Available March 1, 2001



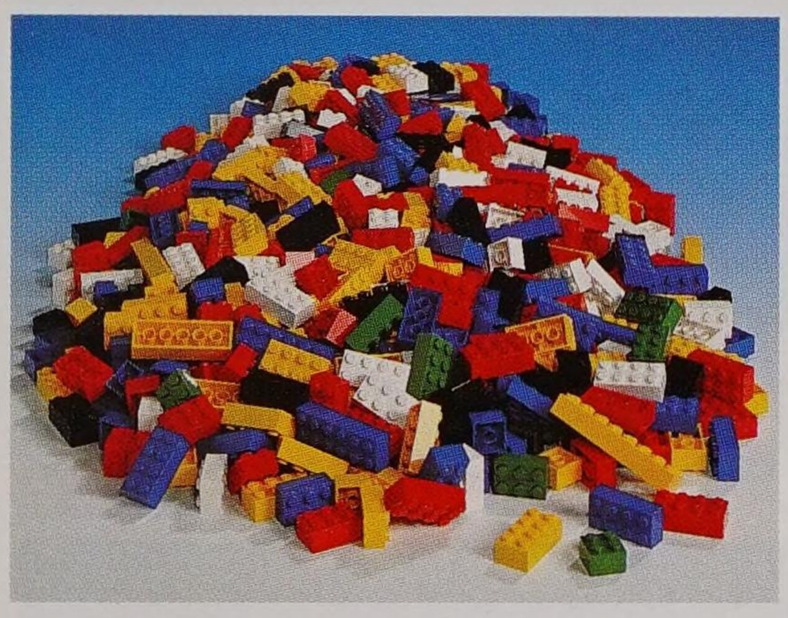
LEGO Technic

TECHNOLOGY RESOURCE SET #979609

1,733 elements

This set is an excellent resource set for special LEGO projects small and large. It's perfect for teachers who want to create their own open-ended design challenges! Students can design and invent solutions to solve problems using this set. It includes a 9-volt motor and battery box, cam wheels, axle extenders, crane hook, wheels, rack and pinion gears, and much more. The *Technology Resource Set* is compatible with all other LEGO Technic materials.

L979609—$230



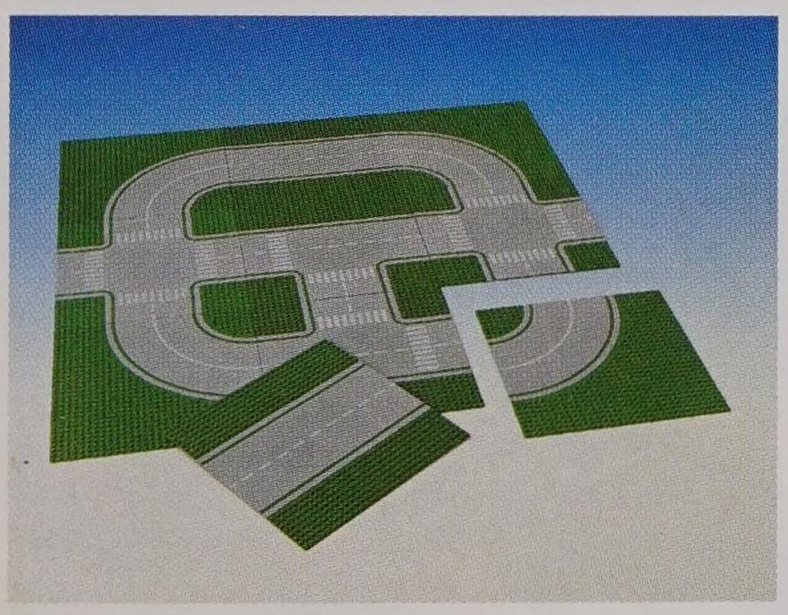
LEGO SYSTEM

LEGO BASIC JUST BRICKS #779251

576 elements

Add these bricks to your existing collection and be sure not to run out. The set includes bricks in six different colors and sizes.

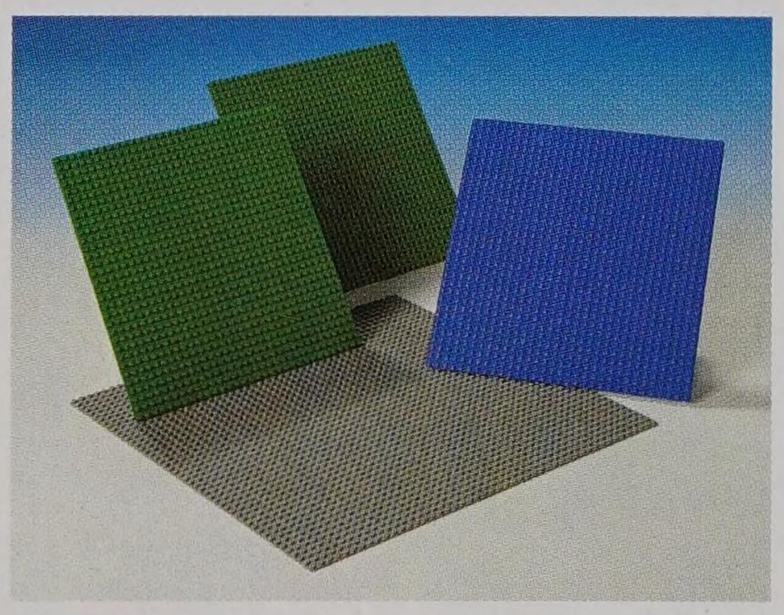
L779251—$24.75



LEGO ROADPLATES #779370

This set of 10 roadplates includes four curves, two crossroads, two T-junctions, and two straight roads. Each plate measures 25 cm x 25 cm (or about 10 inches x 10 inches) and is perfect for any LEGO vehicle collection. The set is especially useful for kids studying transportation or road and traffic safety or creating town or landscape environments.

L779370—$35.25

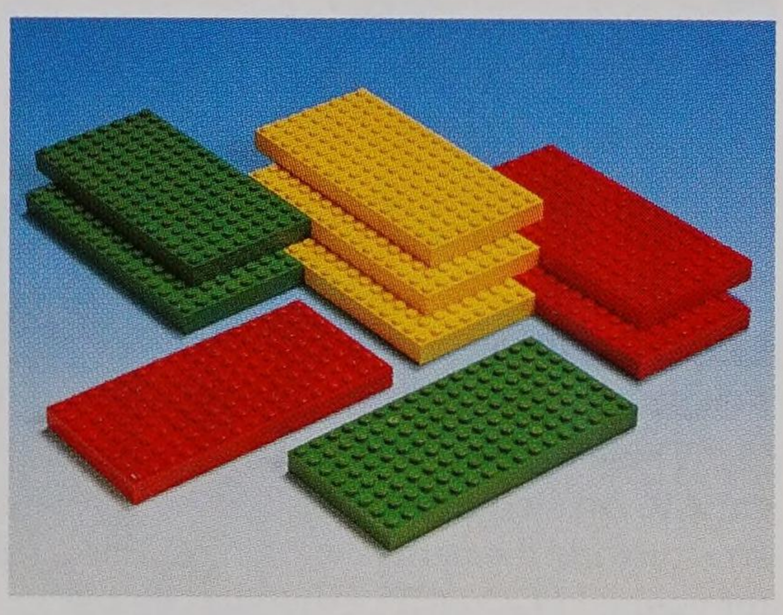


LARGE LEGO SYSTEM BASEPLATES #779286

Children need a foundation on which to build, and each durable baseplate forms a solid base for all LEGO building bricks.

Includes one gray baseplate (38 cm x 38 cm), two green baseplates (25 cm x 25 cm), and one blue baseplate (25 cm x 25 cm).

L779286—$23.75



SMALL LEGO SYSTEM BASEPLATES #779279

LEGO creations work much better with a baseplate foundation, and this set includes nine baseplates (6 cm x 12.5 cm) in three different colors: red, yellow, and green.

L779279—$14.50

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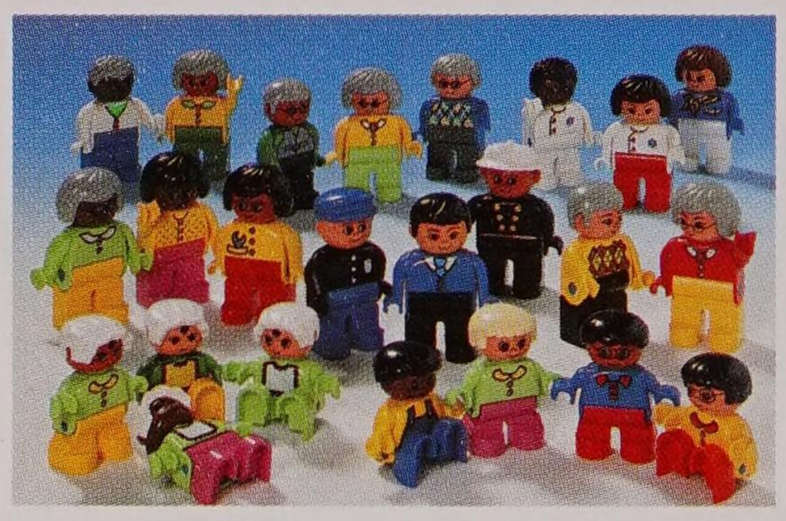


LEGO DUPLO WORLD PEOPLE #779171

24 elements

These culturally diverse figures are a must for every preschool. Includes 24 figures representing four ethnic groups and three generations.

L779171—$42.75

New

LEGO SOFT STARTER SET

The perfect start to a collection of *LEGO Soft Bricks*! The set contains 84 elements that are six times the size of regular LEGOs and include decorated bricks with eyes and mouth, roof tile bricks, and lots of basic bricks in four colors. Safe and quiet *Soft Bricks* can be used indoors or outdoors and are easy to clean.

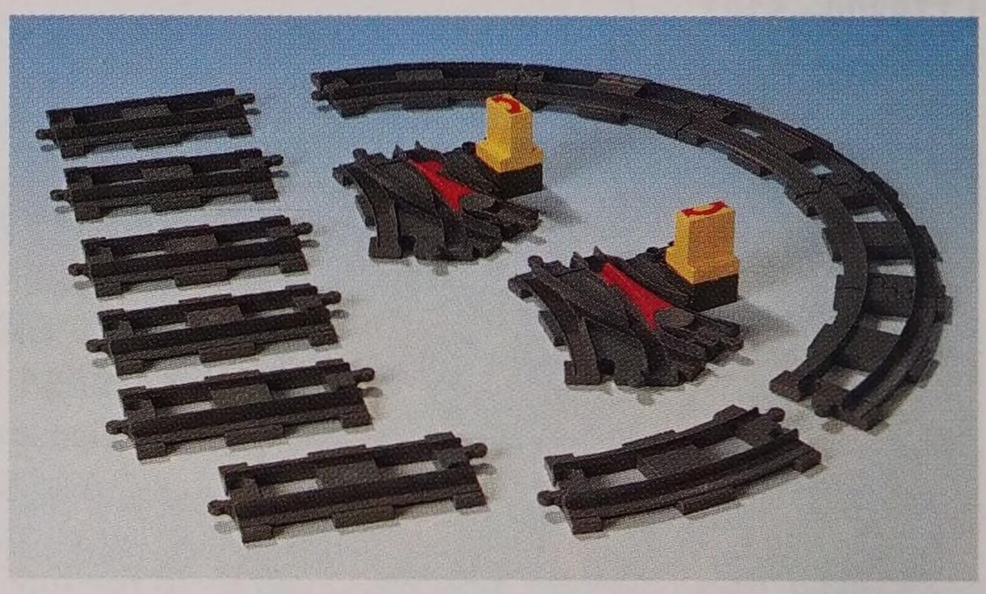
L779020—$235.75

LEGO DUPLO RAILS #779146

16 elements

Sometimes you need a bit more track to make the train go where you want it to go. Includes two points, six straight rails, and six curved rails.

L779146—$24.75



LEGO DUPLO FOUR BASEPLATES #779536

These four white baseplates, each 12 cm x 16 cm (about 4.7 inches x 6.3 inches) in size, provide the perfect working surface for young LEGO DUPLO builders and allow the builders to save their creations for another day.

L779536—$14.50

LEGO DUPLO BUILDING PLATES #779071

Two large 38 cm x 38 cm (15 inches x 15 inches) stud building plates provide the perfect foundation for a preschooler's creativity.

L779071—$20

LEGO DUPLO BASIC MEDIUM BULK #779065

114 elements

These bricks in different shapes and colors can add even more building possibilities to existing LEGO DUPLO collections.

L779065—$31.50

Call Toll Free!
800-362-4308

LEGO DUPLO LITTLE FOREST FRIENDS #779129

129 elements

This charming set includes four families (the Meadowsweets, the Strawberries, the Toadstools, and the Bluebells), each with their own characteristics, living and having adventures in the forest. The 129-piece set also contains pieces to form a forest environment and forest animals including a bee, a spider, a snail, and a ladybug. Four story booklets, one about each family, are also included.

L779129—$94

LEGO DUPLO HOME #779148

107 elements

Home for sale. Prime features: open floor plan with movable walls, completely furnished! Includes eight family members, a vacuum, a dog, a cat, a baby swing and stroller, a tricycle, and a doorbell that really rings.

L779148—$84.50

LEGO DUPLO FARM ANIMALS #779137

36 elements

Includes 14 animals, farmers, snap-together fencing, and a feeding trough that make this set a great addition to any collection.

L779137—$32.50

LEGO DUPLO COMMUNITY WORKERS #779170

18 elements

This set of 18 figures includes a doctor, a firefighter, a mechanic, a police officer, and more! Three generations are included, too – grandparents, parents, and babies. A great supplement to any basic LEGO DUPLO set, it lets kids populate their towns with citizens and workers.

L779170—$31.50

LEGO DUPLO ZOO ANIMALS #779192

16 elements

Your children will make fast friends with these 16 baby animals, including penguins, giraffes, elephants, hippos, whales, lion cubs, a panther cub, a polar bear, and a panda.

L779192—$26

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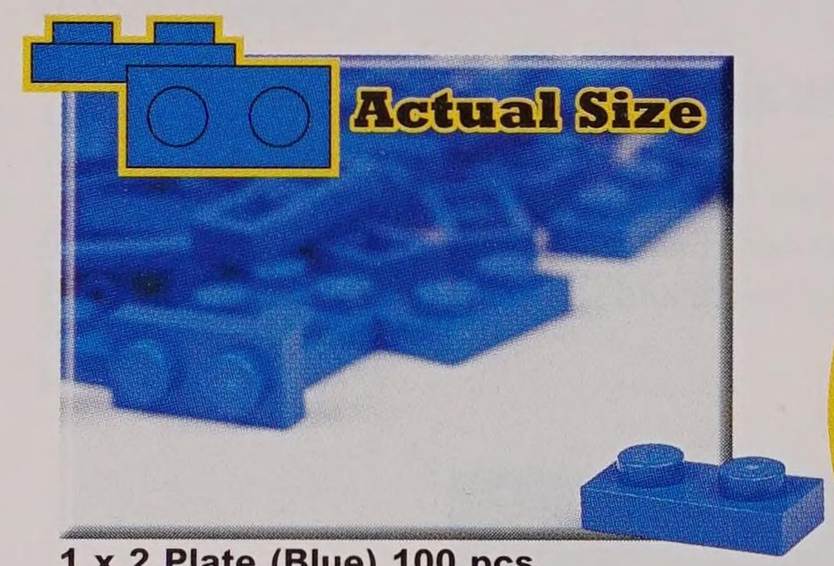
1 x 2 Brick (Red) 50 pcs
L970008—$10

1 x 2 Beam (Red) 50 pcs
L970013—$10

6-Stud Axle (Black) 75 pcs
L970015—$10



1 x 2 Plate (Blue) 100 pcs
L970009—$10

Red Rover Tire & Hub
4 pcs of each
L970021—$10

4-Stud Axle (Black) 100 pcs
L970014—$10

O-Ring (Black) 50 pcs
L970007—$10

3-Stud Axle (Black) 100 pcs
L970019—$10

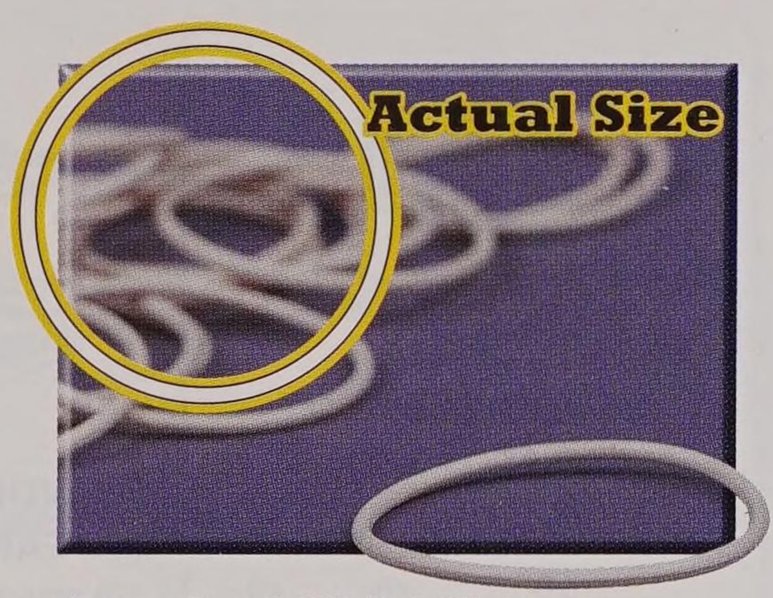
Hub (Gray) 50 pcs
L970010—$10

Pulley Wheel (Gray) 50 pcs
L970018—$10

Bushing (Gray) 100 pcs
L970016—$10

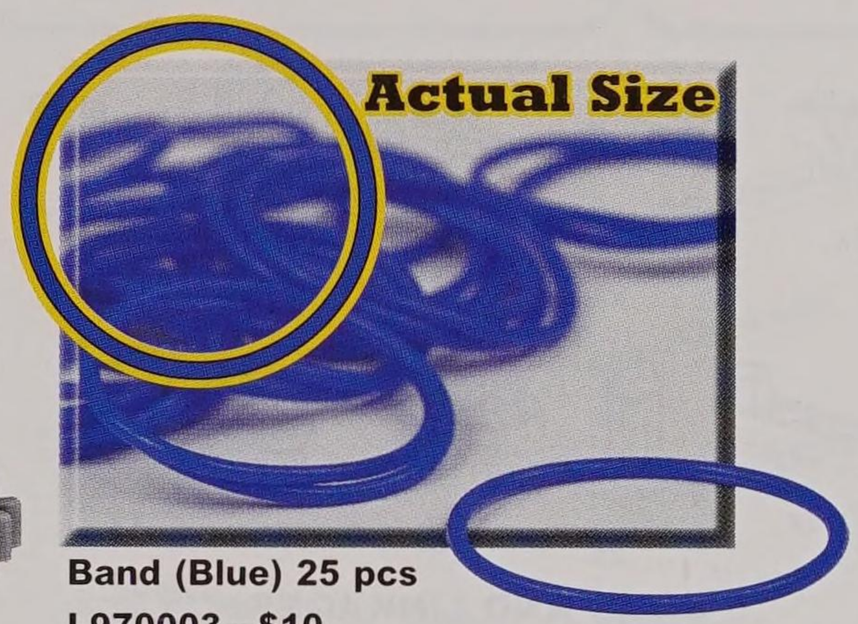
Small Pulley (Gray) 100 pcs
L970020—$10

Small Band (White) 25 pcs
L970001—$10



Large Band (White) 25 pcs
L970002—$10

8-Tooth Spur Gear (Gray) 100 pcs
L970011—$10



Band (Blue) 25 pcs
L970003—$10

Band (Yellow) 25 pcs
L970004—$10

14-Tooth Beveled Gear (Gray) 100 pcs
L970017—$10

Friction Connector Peg (Black) 100 pcs
L970006—$10

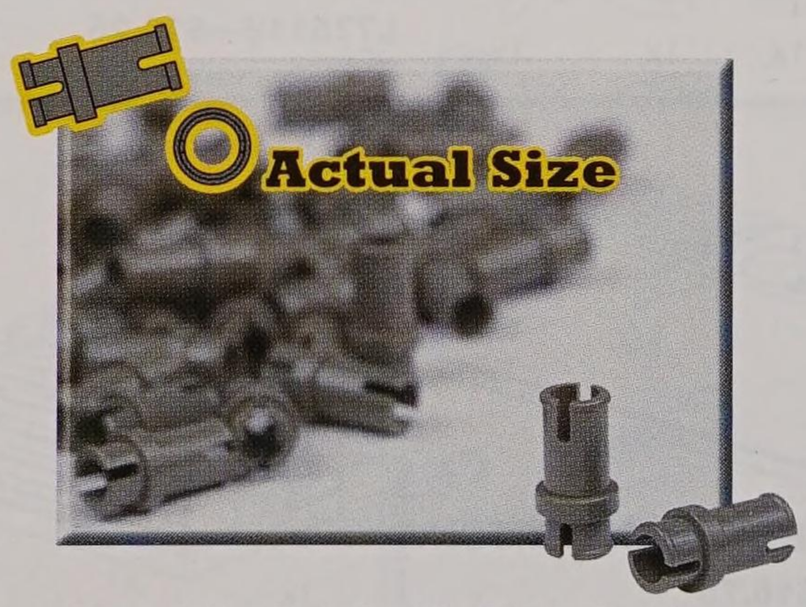
1 x 2 Lamp Brick 9V (White) 2 pcs
L970005—$10

LEGO SYSTEM WHEELS #779269
288 elements

Nothing but wheels – just what children want. This complete set includes tires in two different sizes, axles, and wheel hubs to make 72 sets of wheels.

L779269—$34

Connector Peg (Gray) 100 pcs
L970012—$10

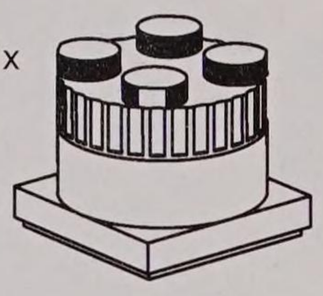


Connector Peg 1-1/2" (Dark Gray)
100 pcs
L970022—$10

PITSCO LEGO dacta
PARTNERS IN INNOVATIVE EDUCATION

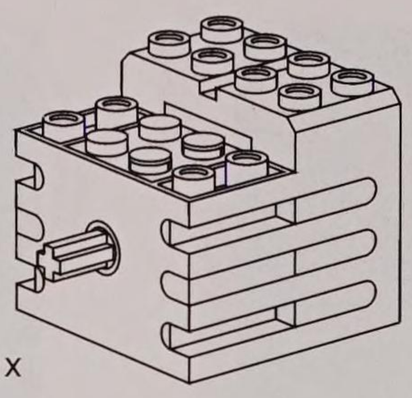
108 Parts

1x



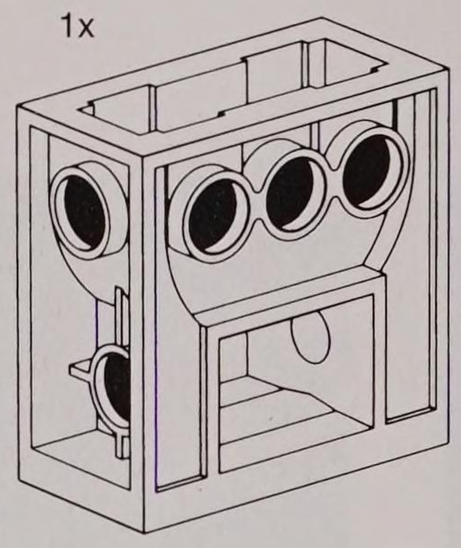
SOUND ELEMENT
L779885—$10.50

1x



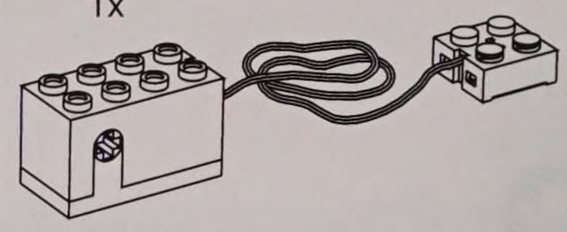
9-VOLT MOTOR WITH GEAR REDUCTION
L775225—$16.25

1x



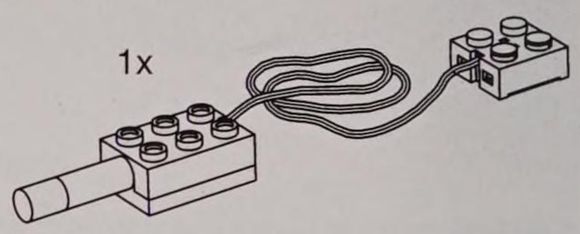
YELLOW GEAR BLOCK
L779918—$2.75

1x



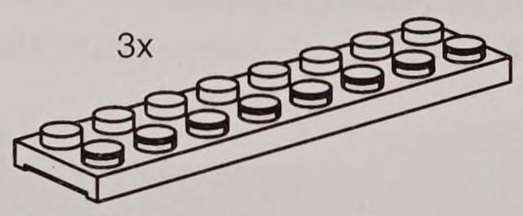
9-VOLT ANGLE SENSOR
L979891—$16.50

1x

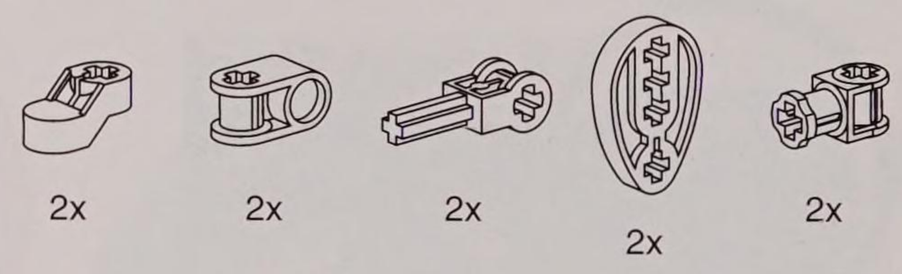


9-VOLT TEMPERATURE SENSOR
L979889—$27.50

3x

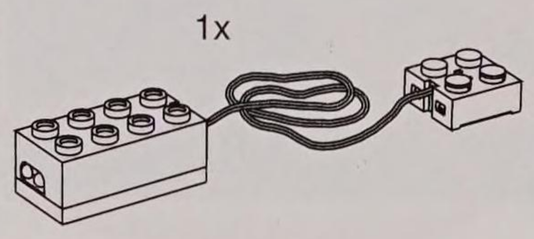


ELECTRIC PLATES
L779886—$6

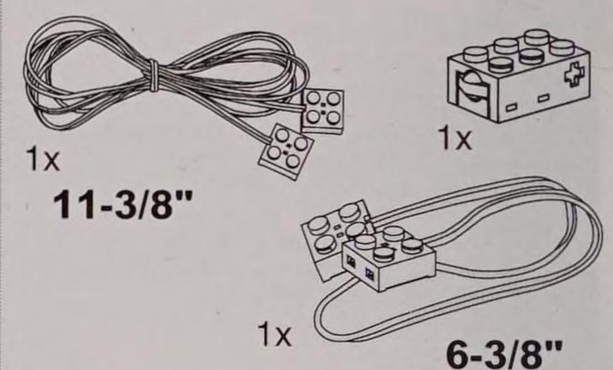


CAMS AND LINKAGES
L779941—$5.50

1x

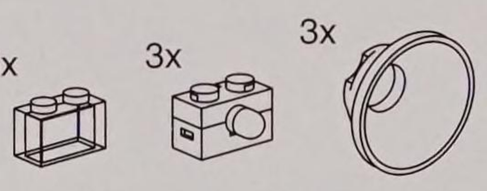


9-VOLT LIGHT SENSOR
L779758—$22

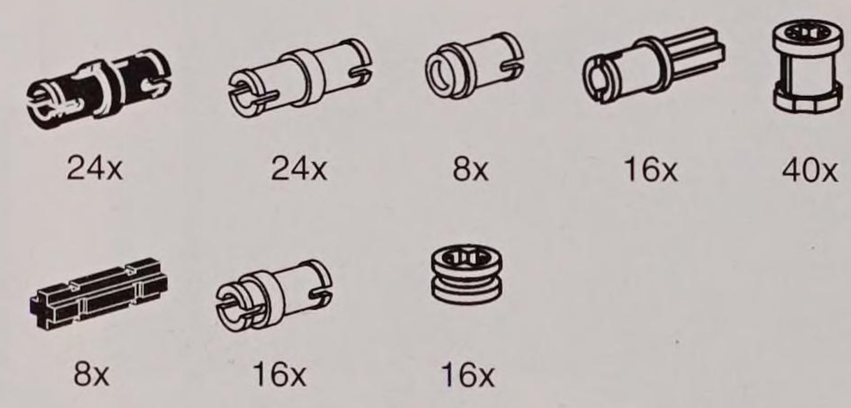


9-VOLT TOUCH SENSOR AND LEADS
L779911—$11

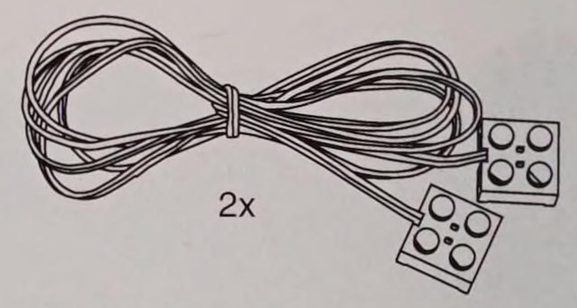
3x 3x 3x



LAMPS AND FITTINGS
L779848—$24.50

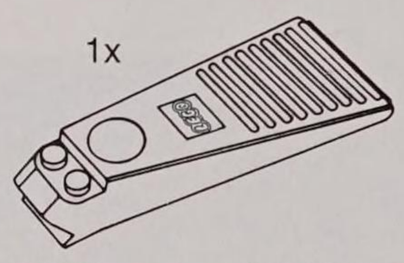


CONNECTORS & BUSHINGS
L779942—$7.25

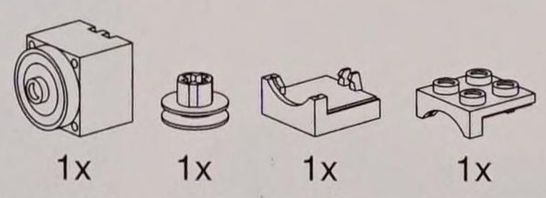


9-VOLT LONG CONNECTING LEADS (APPROX 10') L779898—$13

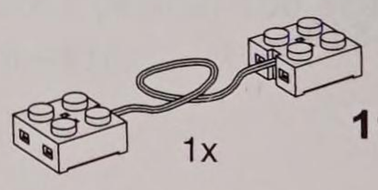
1x

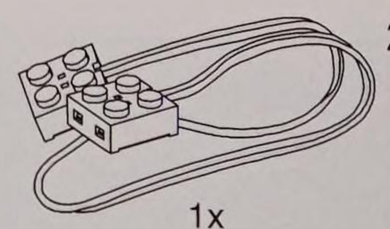


BRICK SEPARATOR
L779892—$5

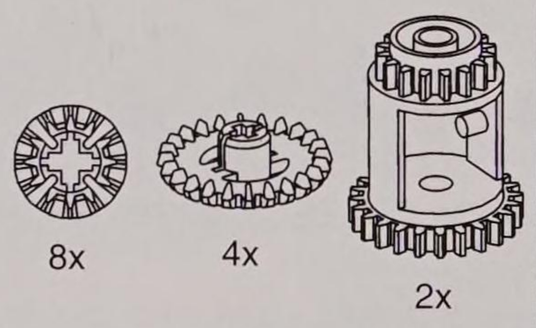


9-VOLT MICRO-MOTOR
L775119—$10.25



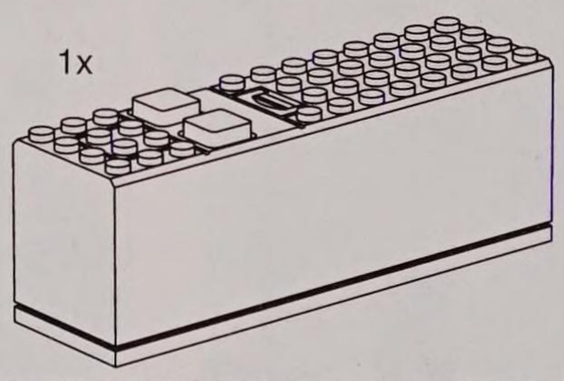


8x 4x 2x



DIFFERENTIALS
L779945—$5.50

1x



BATTERY BOX WITH SWITCH
L779831—$16.75

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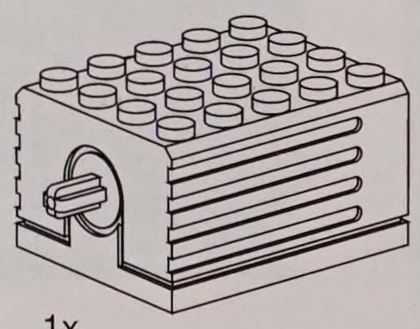
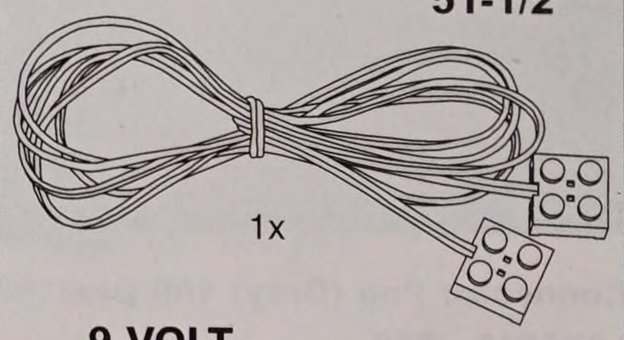


9-VOLT MOTOR
L775114—$17.50

51-1/2"



9-VOLT CONNECTING LEADS
L779897—$13

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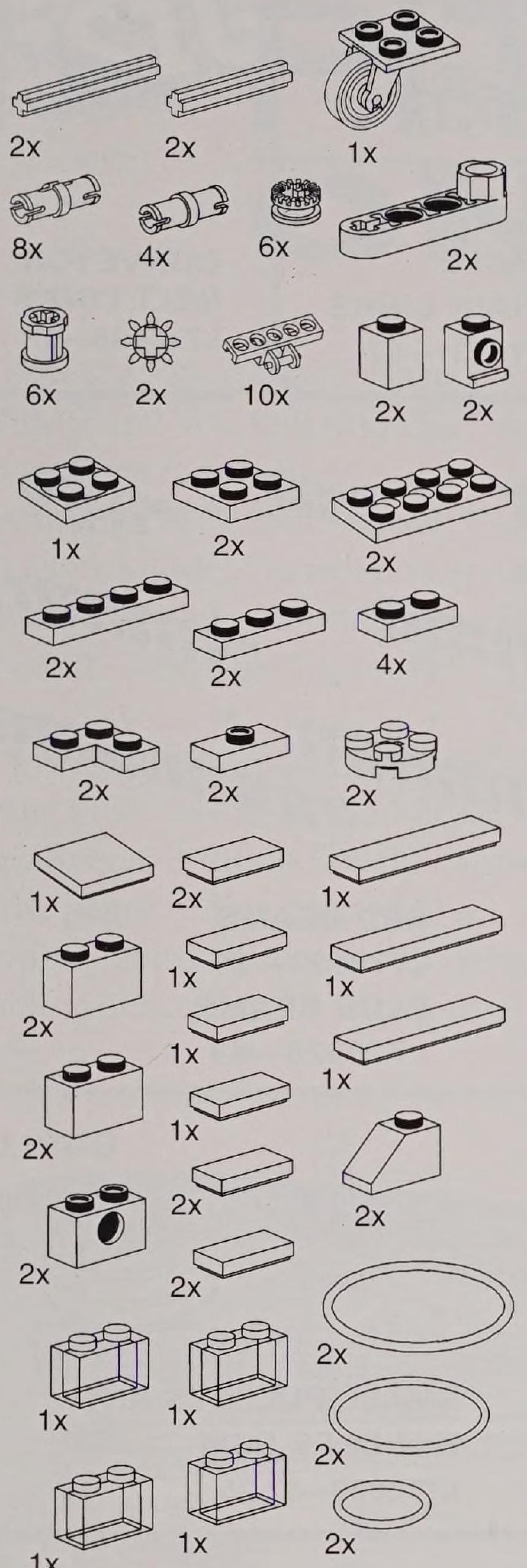
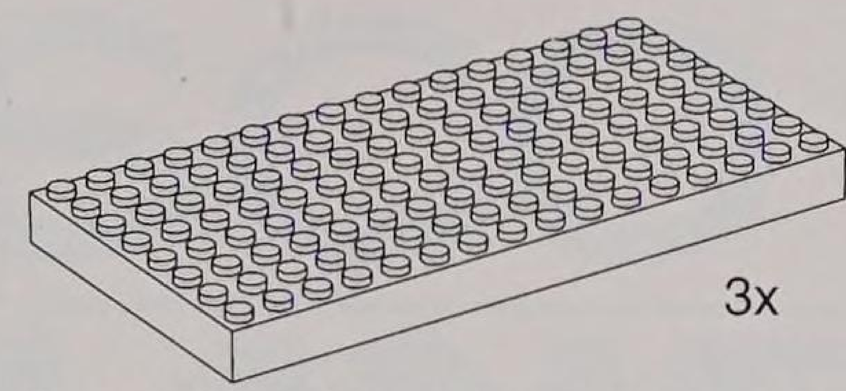
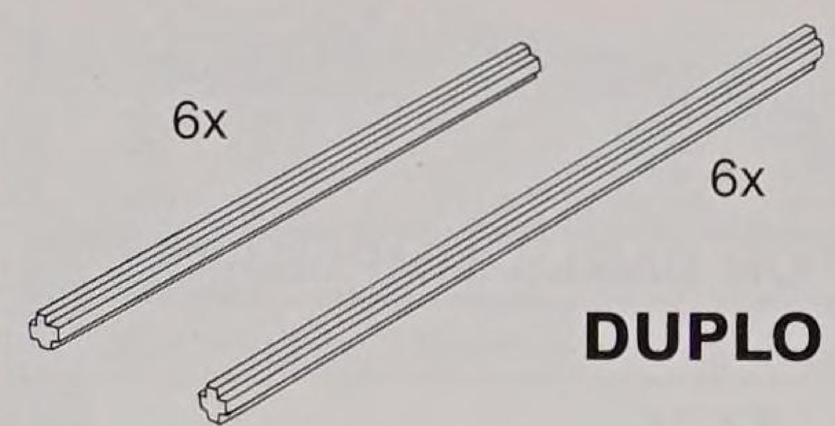


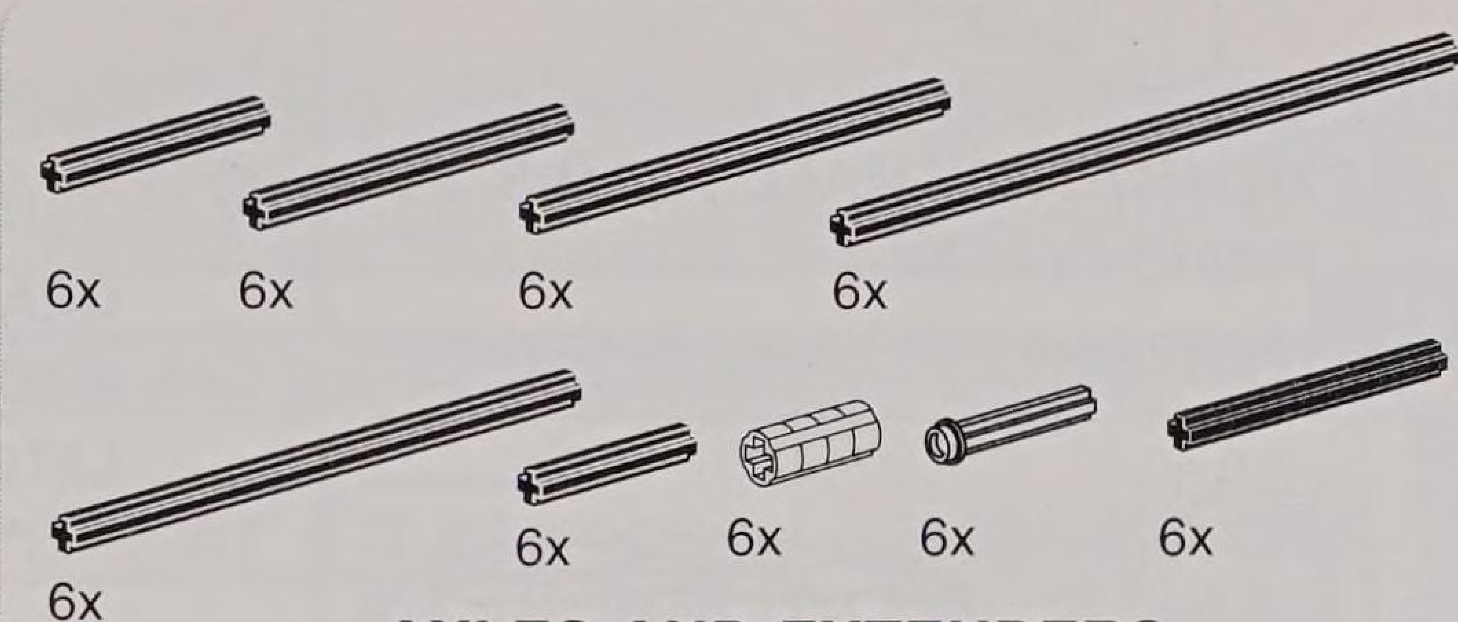
SPECIAL ELEMENTS FOR #979701
L779958—$9



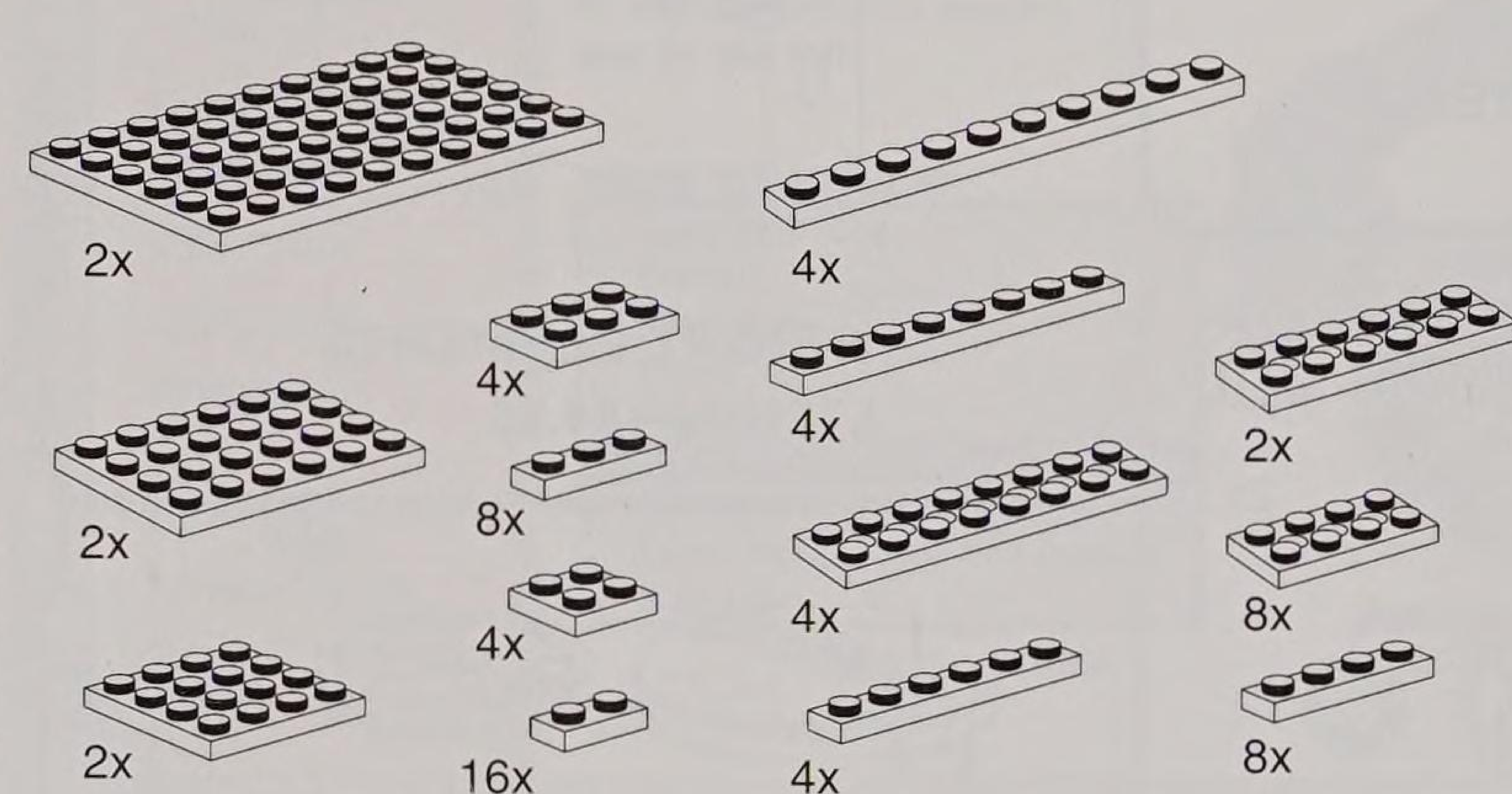
GREEN BUILDING PLATES
L779864—$7.75



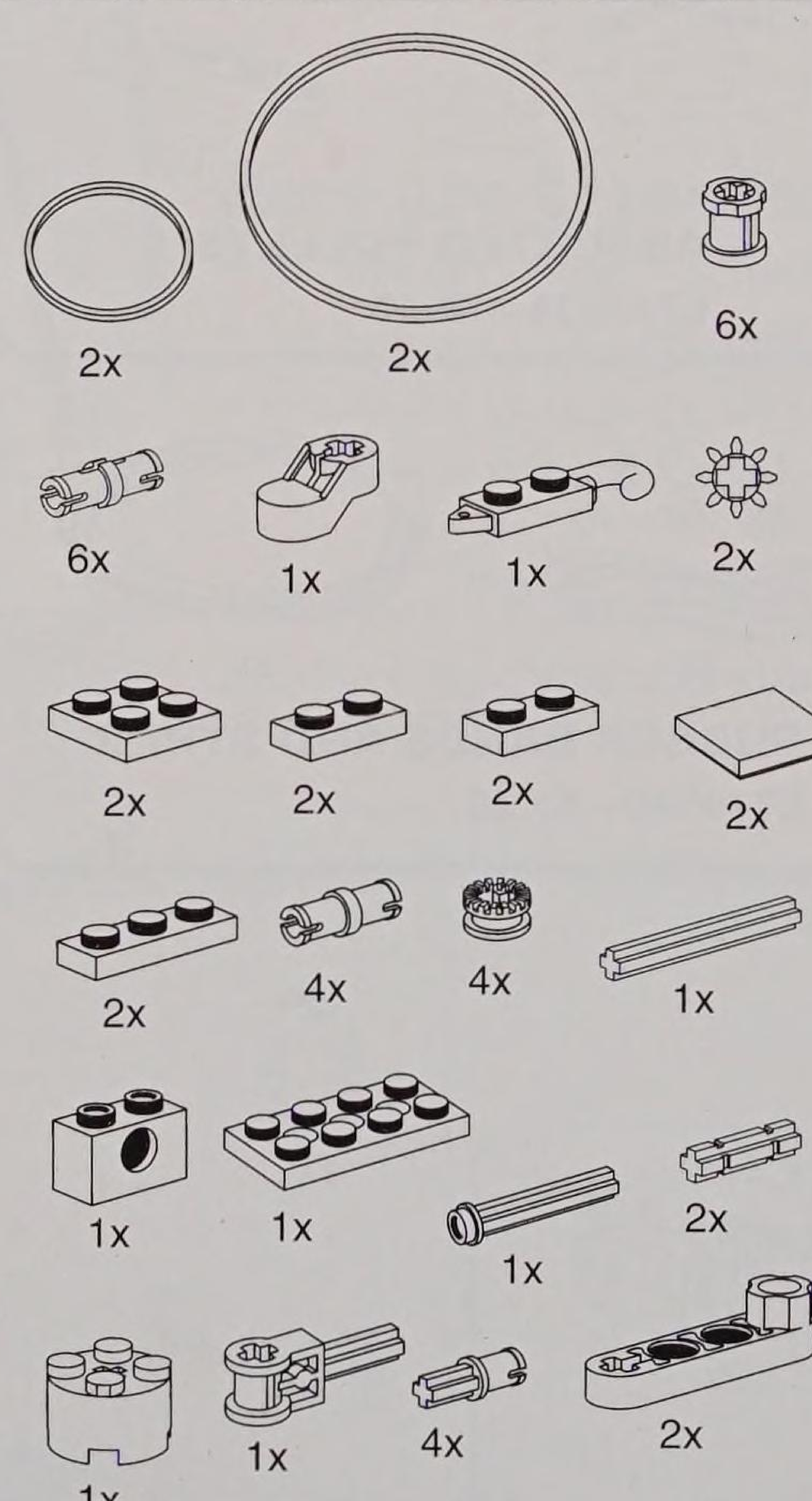
AXLES FOR EARLY SIMPLE MACHINES
L779837—$7.25



AXLES AND EXTENDERS
L779943—$6.50



RED PLATES
L779929—$8
BLUE PLATES
L779930—$8
YELLOW PLATES
L779931—$8
BLACK PLATES
L779932—$8



SPECIAL ELEMENTS FOR MINI SETS
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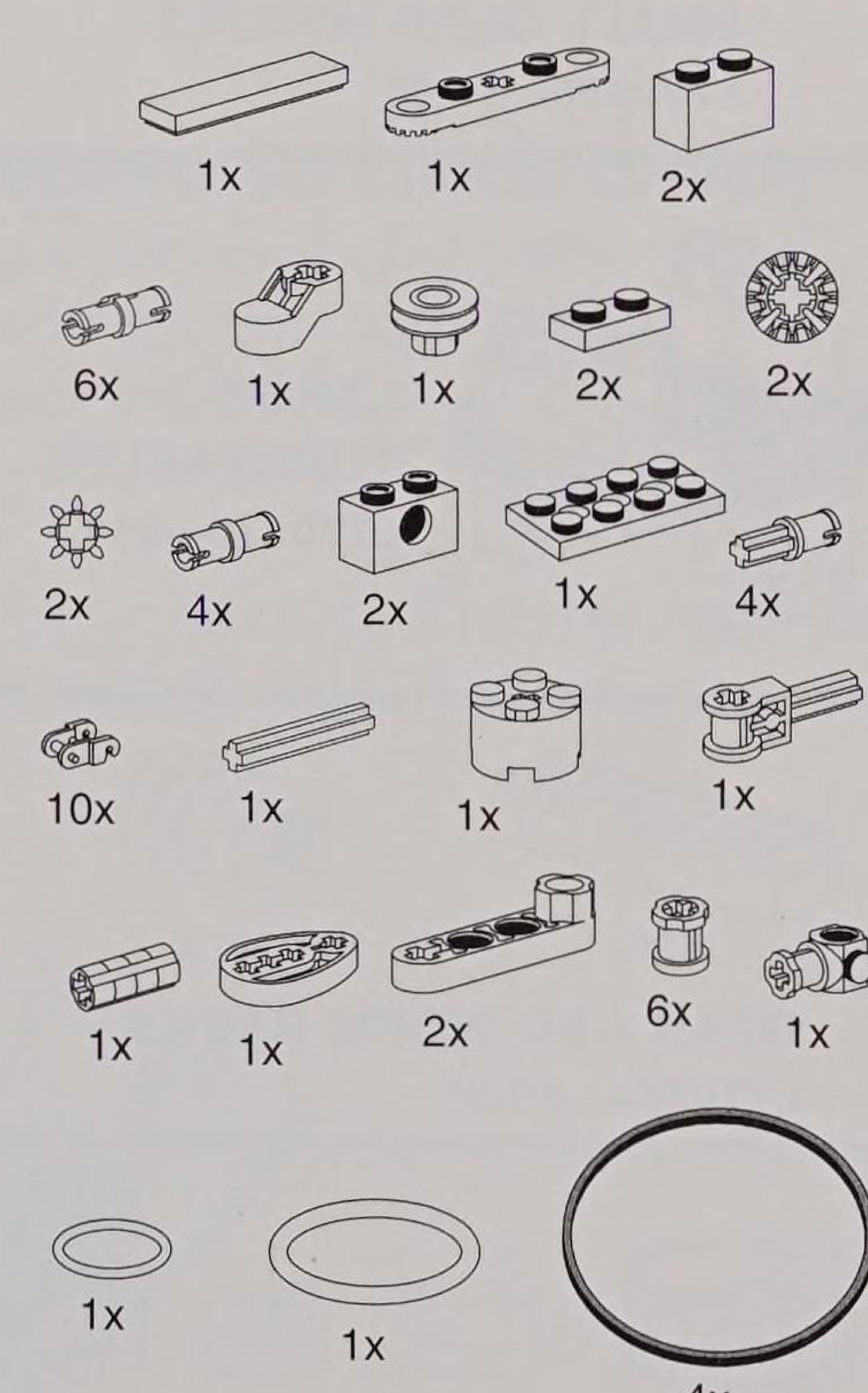

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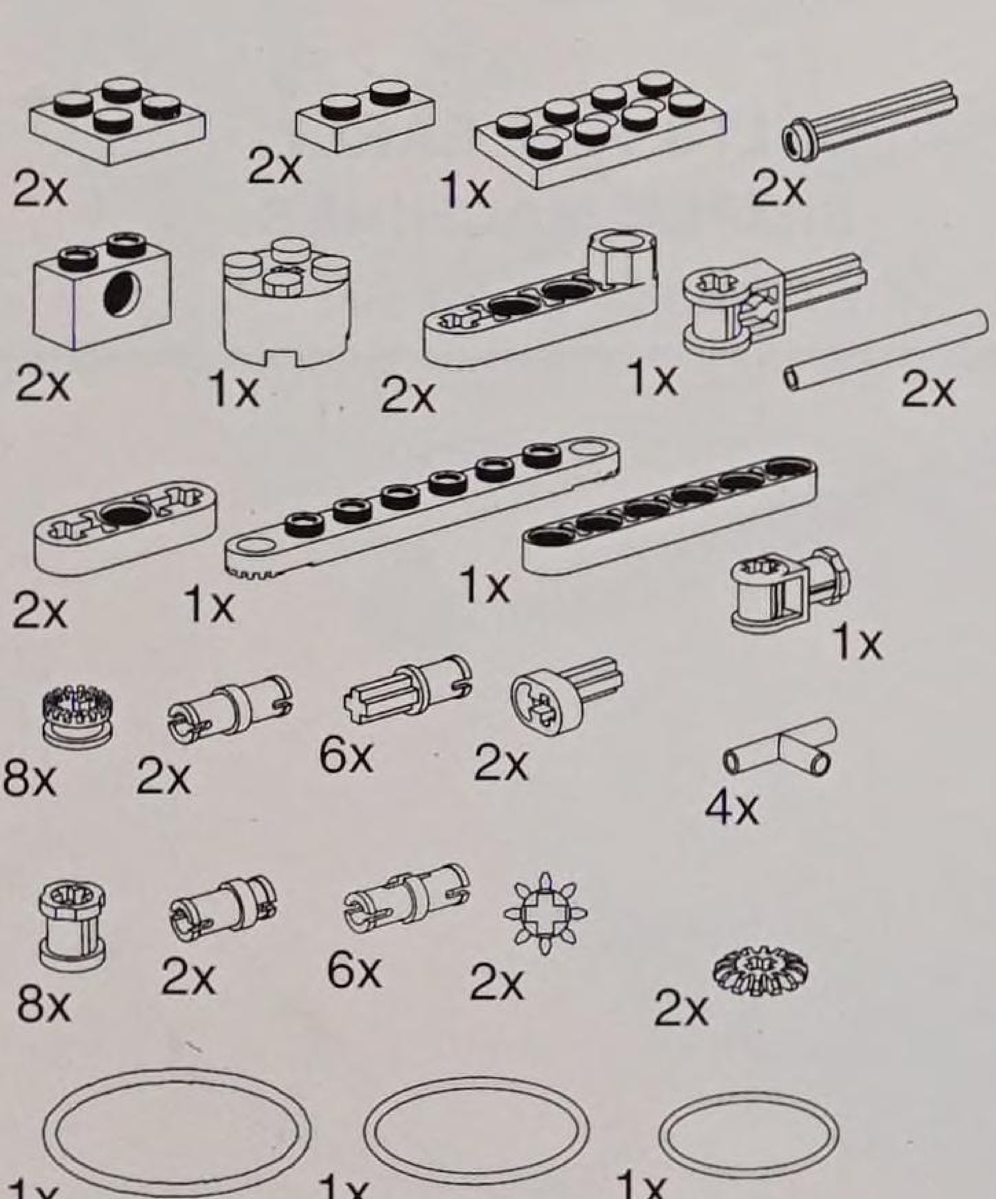

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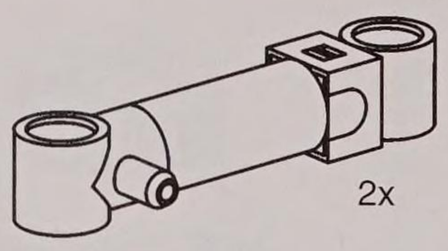

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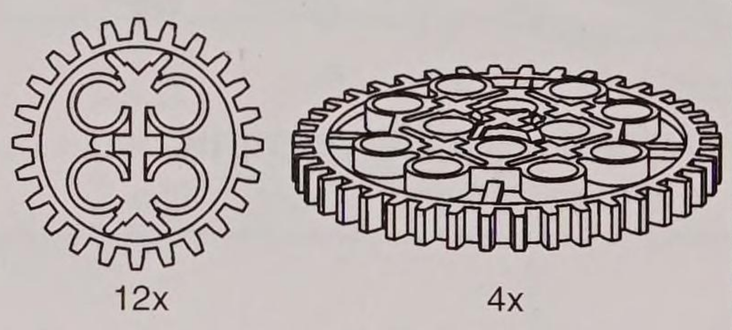
L779915—$10.75



LARGE GEAR WHEELS
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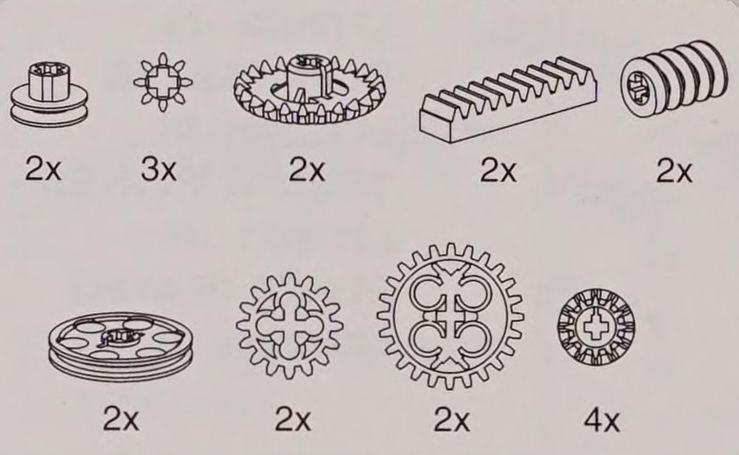
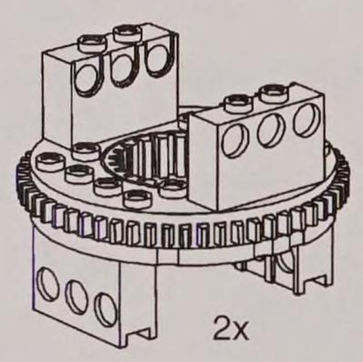


SMALL GEAR WHEELS
L779900—$6.50



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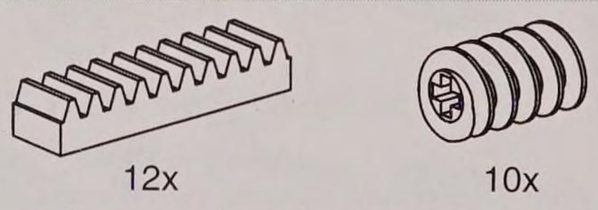
L779876—$10



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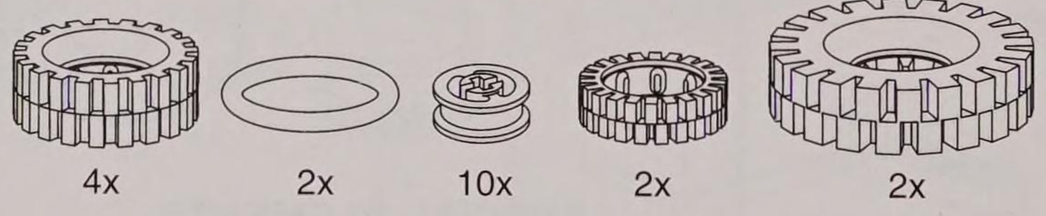

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L779899—$6.50

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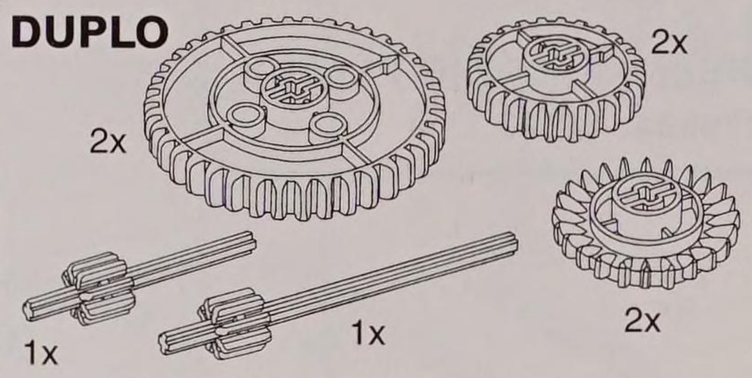

GEARS FOR EARLY SIMPLE MACHINES
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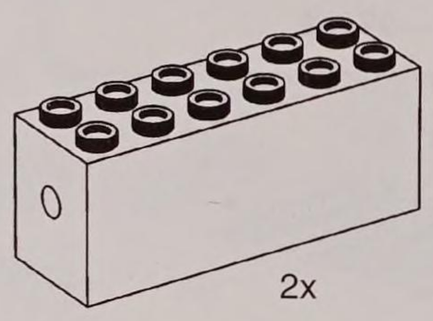

WEIGHT ELEMENTS
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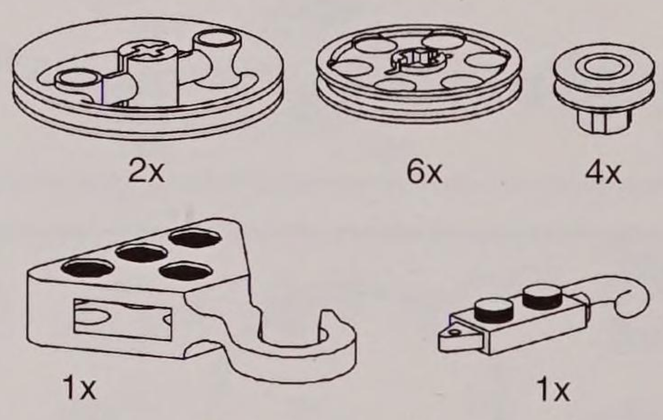

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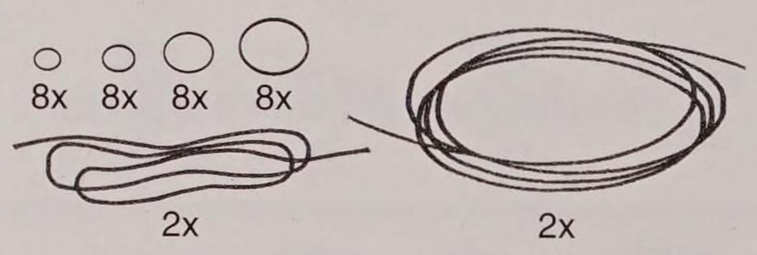
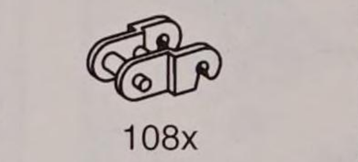


RUBBER BANDS AND STRING
L779940—$7.25



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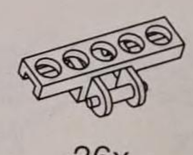
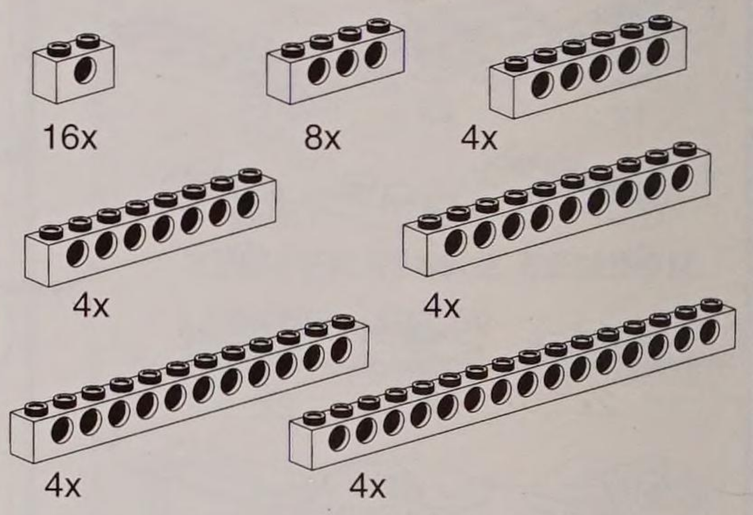
L779937—$7



CONVEYOR BELT LINKS
L779938—$7



RED BEAMS
L779927—$9
BLUE BEAMS
L779928—$9

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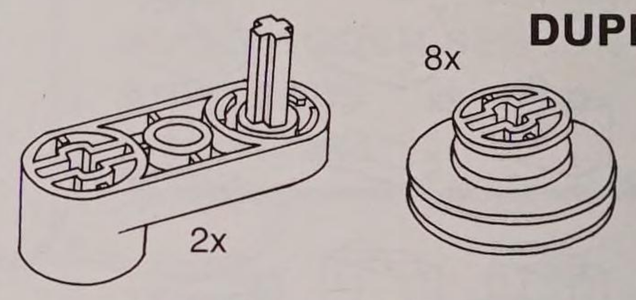

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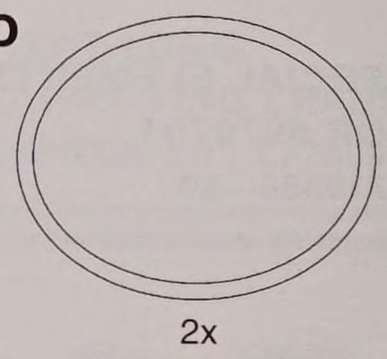

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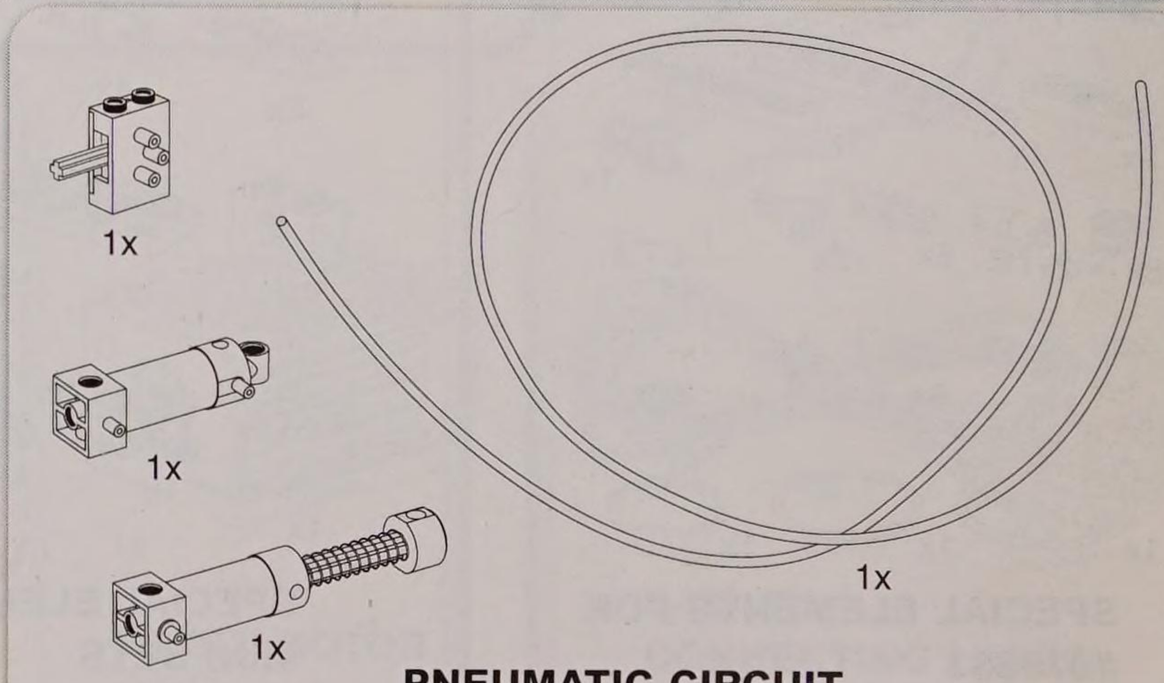

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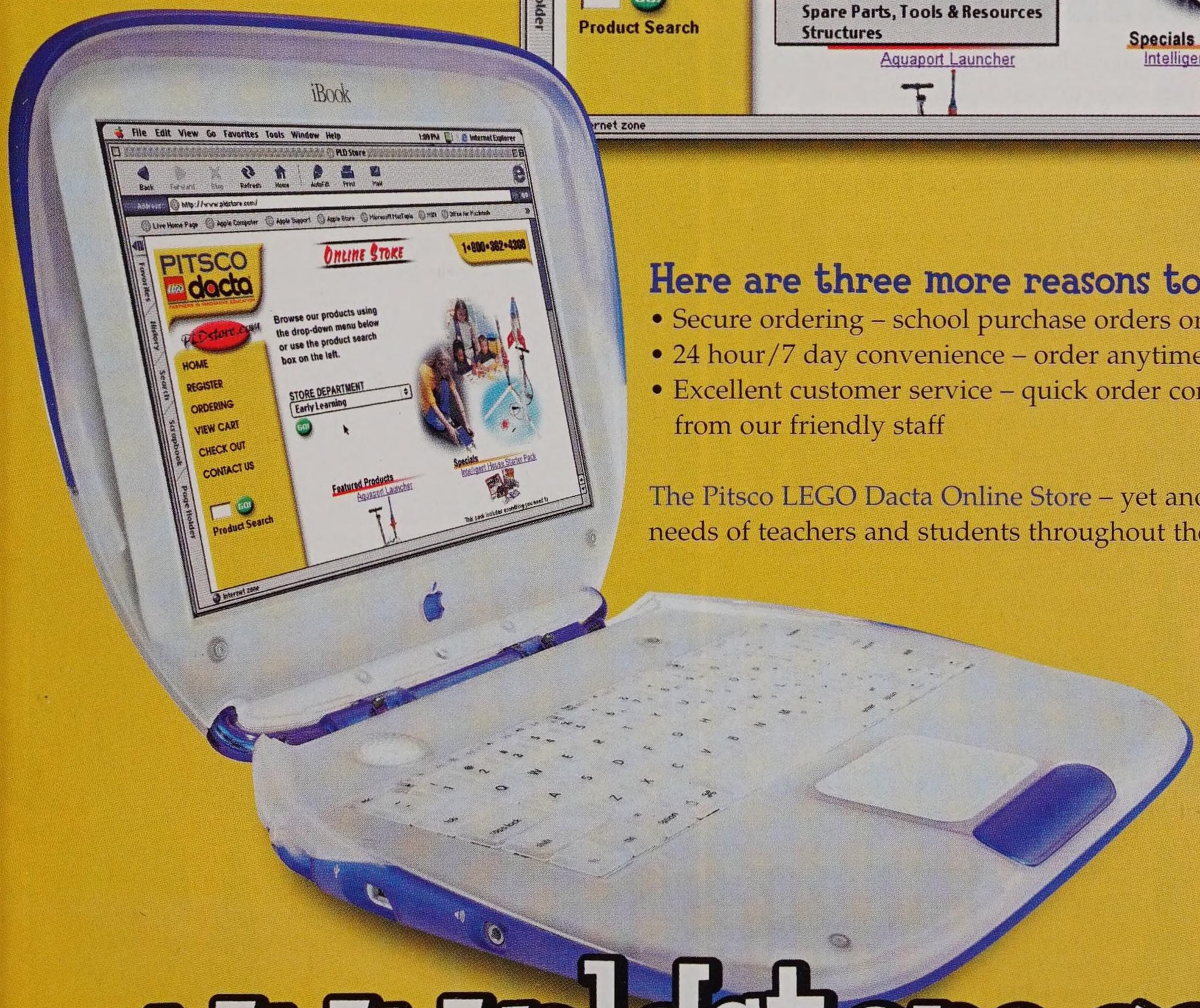

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GRADES K-8

SPECTRUM LINKS™

This excellent curriculum engages children, from kindergarten to eighth grade, in activities that relate to their home and school. Students work in small groups and are introduced to concepts upon which they will build. In this spiraled curriculum, these experiences serve as foundations for more complex experiences as their grade level increases.

The hands-on activities are designed to initiate questions and awaken their interest. Each activity builds upon the students' previous experiences. There are multiple activities in each topic area for each grade level.

Through these activities, students discover concepts related to materials, structures, mechanisms, energy, and control. Students are introduced to a comprehensive range of skills, which are developed at an age-appropriate level. Students at each level are engaged in challenging activities designed to develop and further the higher order thinking skills. Basic concepts are learned through these activities delivered within the contexts of seven subject areas.

Within each of these contexts, activities are enhanced through the use of LEGO Dacta and Pitsco products in addition to inexpensive, easy-to-find materials. Check our tools, resources and parts section, toward the end of this catalog, for many of these products. Students who participate in this integrated curriculum will be actively engaged in a constructionist approach to learning.

SPECTRUM LINKS™ curriculum is designed to be incorporated into existing elementary instruction and is highly adaptable to suit *your* classroom.

L990047 K-2 Curriculum Guide Series—$90
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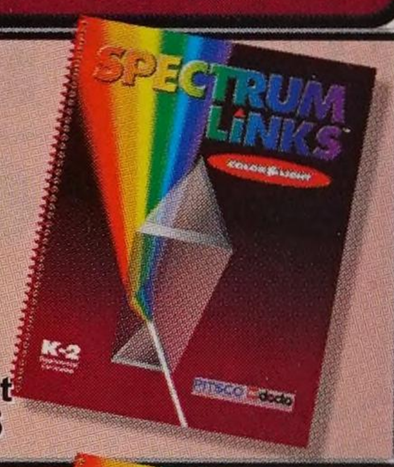
GRADES K-2

COLOR & LIGHT

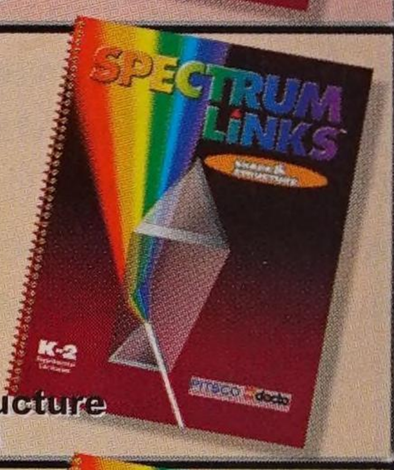
- Color Collections
- Color Build
- Discovering Shades
- Eyes
- Rainbow Shades
- Tasty, Tasty



L990024 K-2 Color & Light Curriculum Guide—$13.95

SHAPE & STRUCTURE

- Building a Tower
- Rapunzel's Fire Escape
- Tall Tower
- Sorting Material
- Dominoes
- Building a Wall
- The Third Little Pig
- Bricks
- My House is Made of…
- Mobile Home



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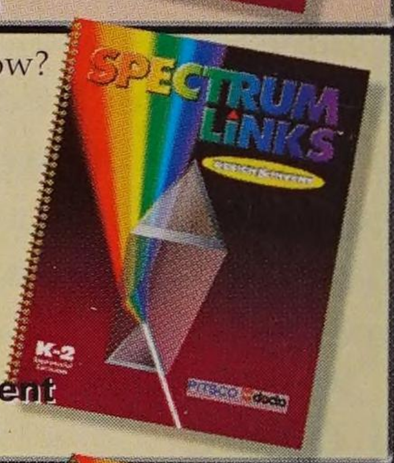
DESIGN & INVENT

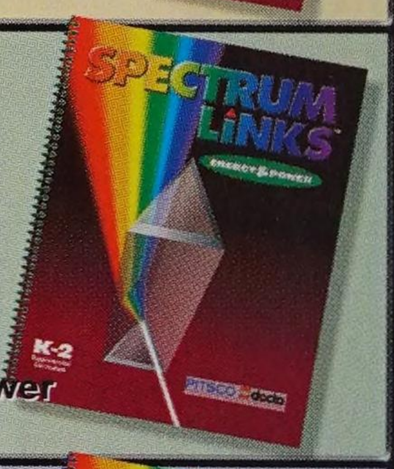
- How Does Your Garden Grow?
- Animals
- Fencing Fun
- Touch and Tell
- Looking Through Colors
- Design and Make a House
- Cinderella's Castle



L990030 K-2 Design & Invent Curriculum Guide—$13.95

ENERGY & POWER

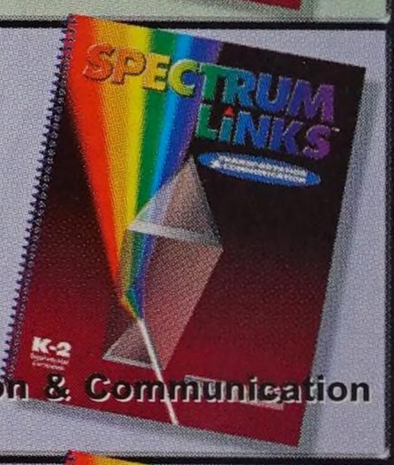
- Hear, Hear
- Twang!
- Make and Shake
- Hot or Cold?
- Jack Flash



L990033 K-2 Energy & Power Curriculum Guide—$13.95

TRANSPORTATION & COMMUNICATION

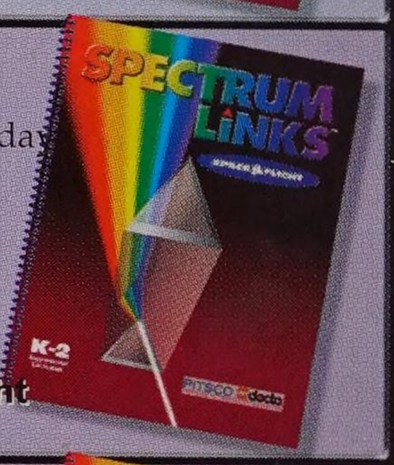
- Push, Push!
- Push a Car
- Pull, Pull!
- Floaters
- Floating or Sinking
- Glug or Go?
- Lifeboat
- Give Me a Sign



L990036 K-2 Transportation & Communication Curriculum Guide—$13.95

SPACE & FLIGHT

- Oh, Blow!
- Flap Jack
- What is the Weather Like Today
- Wind Indicator
- Free Fall
- Whirligig
- Sail Away!



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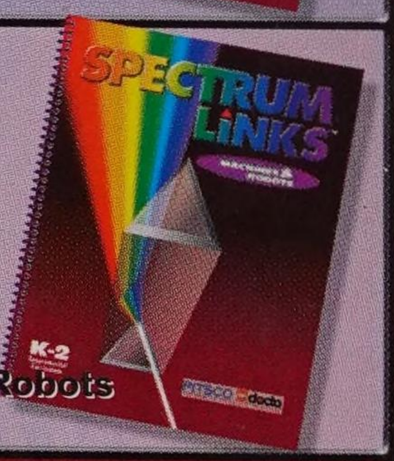
MACHINES & ROBOTS

- Sand and Water Clocks
- Making a Sand Tower
- Investigating a Water Clock
- The Clown's Eyes
- A Merry-Go-Round
- Which Way, How Fast?
- A Winch
- Robots



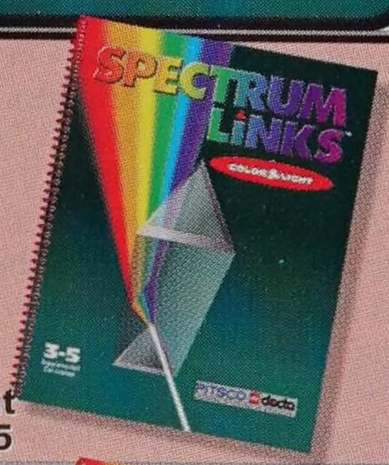
L990042 K-2 Machines & Robots Curriculum Guide—$13.95

L990047 K-2 Curriculum Guide Series—$90

GRADES 3-5

COLOR & LIGHT

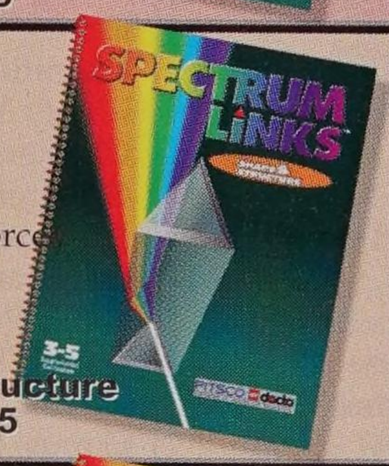
- Spinning Colors
- Hot and Cold Colors
- Red Is For Danger
- What Colors Make Black?
- Pinhole Camera



L990025 3-5 Color & Light Curriculum Guide—$13.95

SHAPE & STRUCTURE

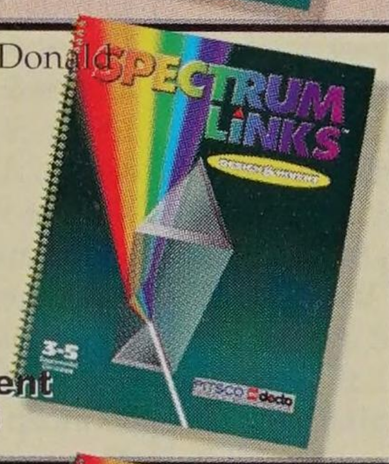
- Foundations
- Making and Testing Bricks
- Lighting a House
- Stage Struck
- A Bridge Too Far
- Exploring Structures and Forces
- Scaffolding and Framework



L990028 3-5 Shape & Structure Curriculum Guide—$13.95

DESIGN & INVENT

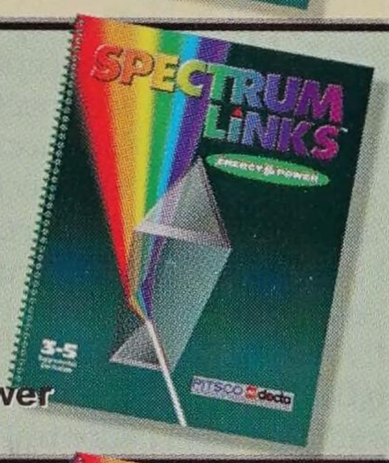
- A Greenhouse for Miss MacDonald
- Egg Packaging
- Robinson Crusoe's Shelter
- Make a Paper Fabric Clock
- Keeping Warm



L990031 3-5 Design & Invent Curriculum Guide—$13.95

ENERGY & POWER

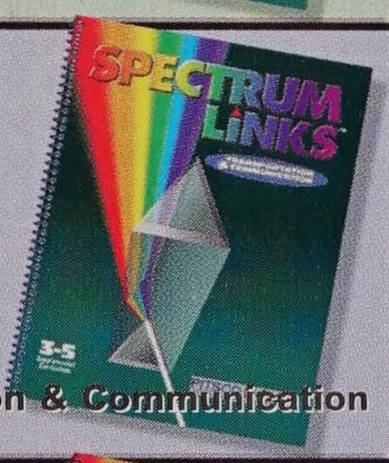
- Sounds on the Move
- Telephones
- Lighthouses
- Traffic Lights
- Alarm
- Robo Car
- How Do We Keep Warm?



L990034 3-5 Energy & Power Curriculum Guide—$13.95

TRANSPORTATION & COMMUNICATION

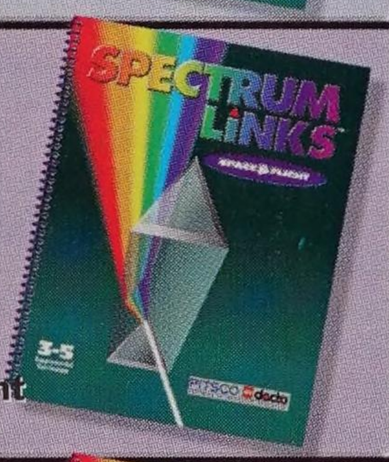
- Rolling and Sliding
- Cars and Ramps
- Racing Cars
- Paddle Boats
- But, Does It Work?
- Wheels and Axles
- Land Yachts
- Truck Loads
- Joe's Carry All



L990037 3-5 Transportation & Communication Curriculum Guide—$13.95

SPACE & FLIGHT

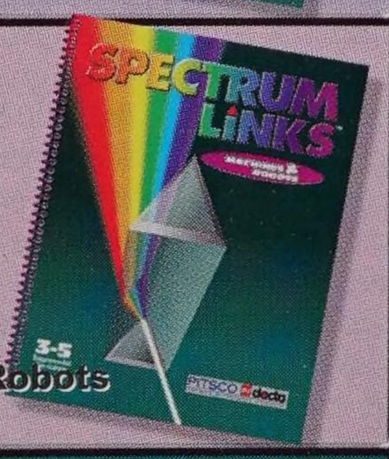
- Fly Past
- My Flyer
- Helicopters
- Wing Shapes
- Parachutes
- Kites



L990040 3-5 Space & Flight Curriculum Guide—$13.95

MACHINES & ROBOTS

- Timing with a Marble
- Candle Clocks
- One Second Pendulum
- Stow Away
- Come to the Circus
- Light Robots
- Reach Out



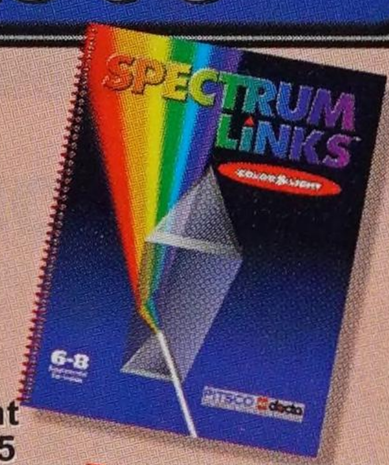
L990043 3-5 Machines & Robots Curriculum Guide—$13.95

L990048 3-5 Curriculum Guide Series—$90

GRADES 6-8

COLOR & LIGHT

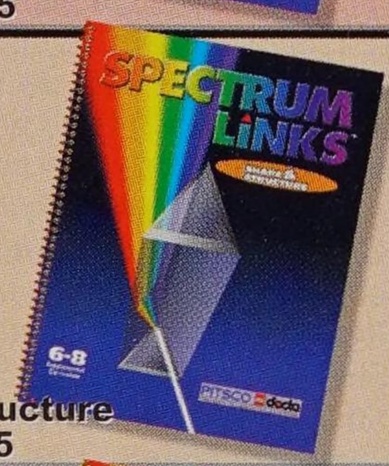
- Camouflage
- The Rainbow
- Colored Lights
- White Light
- Laser Light Show
- Ceiling Fan



L990026 6-8 Color & Light Curriculum Guide—$13.95

SHAPE & STRUCTURE

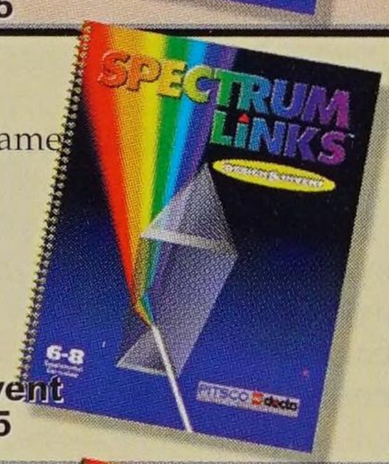
- Tunneling
- Roofs
- Towers
- Bridges Deluxe
- Building a Road



L990029 6-8 Shape & Structure Curriculum Guide—$13.95

DESIGN & INVENT

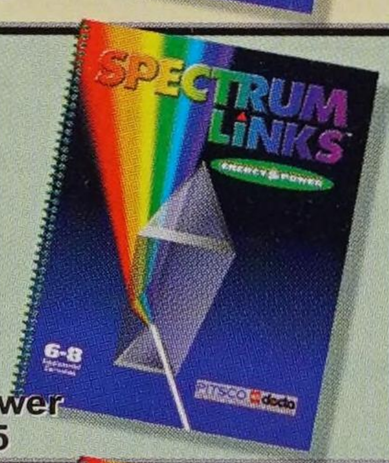
- Candles and Lamps
- A Repeater Alarm
- Designing and Making a Game
- Balloon Clock
- Challenges
- Door Lock System
- Signaling
- Shipwreck



L990032 6-8 Design & Invent Curriculum Guide—$13.95

ENERGY & POWER

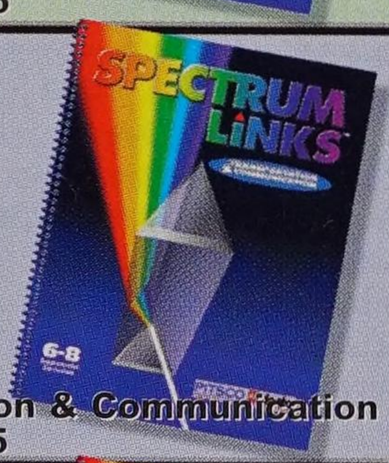
- Lights
- Controlled Traffic Lights
- Exploring Pulleys
- Exploring Gears
- Wind and Water Power
- Water Music
- Making Electricity



L990035 6-8 Energy & Power Curriculum Guide—$13.95

TRANSPORTATION & COMMUNICATION

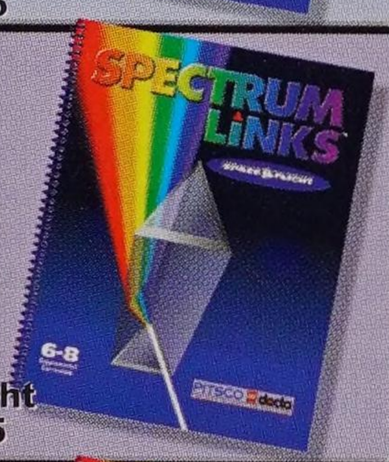
- Balloon-Powered Car
- Boat Loads
- Buggies
- Up the Ramp
- Solar-Powered Car
- Sailing Boats
- Flood Warning
- Crash Barriers
- Robotrike



L990038 6-8 Transportation & Communication Curriculum Guide—$13.95

SPACE & FLIGHT

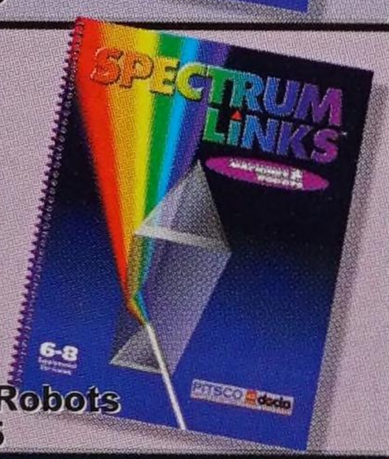
- Rockets
- Jets
- Propellers
- Moon Buggy
- Satellite
- Red Rover



L990041 6-8 Space & Flight Curriculum Guide—$13.95

MACHINES & ROBOTS

- Using Pulleys
- Motorized Conveyor Belt
- Motorized Crane
- Catapults
- Drum Pedal
- Gears
- Multi-Robot
- Motorized Windshield Wipers
- Dactasaur
- Robot Arm
- Robot Arm and Conveyor Belt



L990044 6-8 Machines & Robots Curriculum Guide—$13.95

L990049 6-8 Curriculum Guide Series—$90

GENERAL INDEX

9-Volt Battery 23
9-Volt Motor 108
A.T.A.K. (AquaTrak Accessory Kit) 85
AA Batteries 23, 24, 26, 47, 52, 99
AC Adapter 14
Acrylic Paint, 18 Pack 98
Action Contraptions, LEGO 37
Action Wheelers Set, LEGO 103
Activity Pack, Amusement Park 9
Activity Pack, Cities & Transportation 8
Activity Pack, eLAB 49
Activity Pack, ROBOLAB 5
Activity Pack, Simple Machines 27
Activity Pack, Structures 65
Activity Pack, Team Challenge 7
Adapter, AC 14
Adapter, DCP Sensor 13
Adapter, USB 14
Adhesive 101
Adhesive, HD Bond 101
AIMS, Brick Layers 102
AIMS, Brick Layers II 27
Air Power, Pneumatics I 56
Air Pressure Sensor 13
Airplanes 83
Airport, LEGO BASIC 88, 89
Alligator Clips 52
Amazing Buildings (Book) 69
Amelia Earhart (Book) 88
Amusement Park Activity Pack 9
Amusement Park Set 9
Anemometer 77
Angle Sensor 14, 19, 108
Animals, Farm 105
Animals, Zoo 105
AquaPort Launcher System 74
AquaPort Gauge Manifold Accessory 74
AquaTrak 84
Architecture Is Elementary (Book) 69
Architecture Rubber Stamp Set 69
Architecture Engineering, History (Video) . 68
Art Brush Assortment 98
Art Straws, 4mm 98, 100
Astronaut Foods 77
Awesome Experiments in Electricity & Magnetism (Book) 61
Axle, 3-Stud 106
Axle, 4-Stud 106
Axle, 6-Stud 106
Axles & Extenders 109
Axles For ESM 109
Balance, Electronic 99
Balloon Car Explore-A-Pak 44
Balloons 100
Balloons (Video) 81
Balloons In Flight Mural 81
Balls, Sponge 100
Balsa Gliders 83
Balsa TowerPak 72
Balsa Wood 73
Band, Blue 107
Band, Large White 107
Band, Small White 107
Band, Yellow 107
Baseplates, LEGO System 103
BASIC Tubes, LEGO DUPLO 92
Basswood 101
Basswood BridgePak 70
Basswood TowerPak 72
Batteries 23, 24, 26, 47, 52, 99
Batteries, AA . . 23, 24, 26, 47, 52, 99
Batteries, Bulbs & Wire (Book) . . 58
Batteries, Rechargeable 99
Battery Box w/Switch 108
Battery Charger 99
Beams, 1 x 2 Red 106
Beams, Blue 110
Beams, Red 110
Belt Links, Conveyor 110
Belts for ESM 110
Bench Clamp Base Mount 85
Bevel Washers 42
Beveled Gears 39, 107
Bicycle Pump 74
Big Rocket Ship Bulletin Board Set 79
Bins, Storage 93
Black Plates 109
Blinky Robot Kit 60
Blue Band 107
Blue Beams 110
Blue Glue 101
Blue Plates 109
Blue Roadster Fold-N-Roll Templates 46
Blue Vinyl Tape 100
Blunt End Structure Sticks 67
Boat (Book) 47
Boat Design & Testing: From AquaTrak to the Oceans (Book) 85
Boat Hull Design Kit 85
Boat Track 84
Bonus LEGO BASIC Town Special Value . . . 87
Bottle Rocket Smorgasbord 75
Bottle Rocket (Video) 75
Bottle Rocket, R2K 75
Bottle Rocket, Stratoblaster 75
Bottle Rockets (Book) 77
Bottles, Glue 101
Brads 100
Breakfast 77
Brick Layers 102
Brick Layers II 27
Brick Runner, DUPLO BASIC 92
Brick Separator 108
Bricks 103, 106, 108
Bricks, 1 x 2 Red 106
Bridge Building (Books) 70-71
Bridge Building Medals 73
Bridge Building Software 73
Bridge Building (Video) 71
Bridge Tester 71
BridgePak, Balsa 70
BridgePak, Basswood 70
Bridges 66-73, 96
Bridges (Book) 66, 96
Bridges (Video) 68
Bridges, Paper 73
Bridges, Swing (Video) 68
Bridges, Toothpick 67
Broccoli Rubber Bands 53, 101
Bronze Bridge Building Medals 73
Brush, Art 98
Brutus Robotic Arm 20
Building A Rover (Video) 17
Building Kites 82
Building Plates 104, 109
Building Skyscrapers (Video) 68
Building Toothpick Bridges 67
Buildings, Loads on (Video) 68
Bulbs, Batteries & Wire (Book) 58
Bulletin Board Set 79
Bushing, Gray 106
Bushings & Connectors 108
Cable, Interface 19
Caddy, Construction 70
Camera, Digital 16, 35
Camera, Pin-Hole 62
Cams & Linkages 108
Capacitor 51
Car (Book) 47
Car Builder 47
Car Builder Lab Pack 47
Car Builder, School Pack 47
Card Wheels 44, 101
Careers In Robotics (Poster) 21
Cars 44, 53
Cars, Trucks 45
Cathedrals, Gothic (Video) 68
CD Wheels 42
Certificates, Structures 73
Chain Links, Small 110
ChallengePak 38
Charger, Battery 99
Cheese Pizza 77
Chenille 100
Chevy Template 44
Chicken Dinner 77
Children & Math (Video) 68
Children's Dictionary of Occupations 93
Children's Engineering (Book) 38
Circle Perfect Compass 97
Circuit Board 60
Circuit, Pneumatic 110
Circus, DUPLO BASIC 86
Cities & Transportation Activity Pack 8
Cities & Transportation Set, ROBOLAB 8
Clear Straws 65, 78, 100
Clips, Alligator 52
Coffee Stir Sticks, Wooden 101
Community Workers, LEGO DUPLO 105
Community Workers, LEGO System 102
Compass 97
Competition, Whitewings 83
Concept Guide, Energy 49
Concept Guide, Robotics 5
Concept Guide, Structures 65-66, 96
Connecting Leads 108
Connector Pegs 107
Connectors & Bushings 108
Construction Caddy 70
Constructions for Children (Book) 92
Control Lab Building Set 19
Control Lab Curriculum Pack 19
Control Lab Software 19
Control Lab Starter Pack 18
Conveyor Belt Links 110
Craft Sticks, Colored 101
Craft Sticks, Jumbo 101
Craft Sticks, Notched 101
Cranes (Book) 73
Cubes, 1-Gram Interlocking 99
Cutaway Cars 44
Cutter, Timber 71
Cutter, Tubing 42
Cyclone Robot 21
Cylinder & Pump, Pneumatic 110
Da Camera Expendables Pak 62
Da Camera Pak 62
Dart, Delta 82
DC Motors 54
DCP Sensor Pack 13
Decals 45
Delta Dart 82
Deluxe Port Pump 74
Demonstration Kit, Mousetrap Vehicles 43
Design Challenges, LEGO Dacta 19
Design Technology Children's Engineering . . 38
Designer Software 34
di2000 Structure Tester 72
Dictionary of Occupations 93
Differentials 108
Digital Camera 16, 35
Digital Interface Structure Tester 72
Discovering Fluid Power (Video) 57
Dodge Template 44
Domed Stadiums (Video) 68
Doors & Windows, Large LEGO System . . 102
Double-stick Tape 57, 100
Dowels 101

Dr. Zoon Bridge Building (Video) 71
Dr. Zoon Fold-N-Roll (Video) 46
Dr. Zoon KaZoon Kite Kit 82
Dr. Zoon Kazoon Kite (Video) 82
Dr. Zoon Learning to Solder (Video) 60
Dr. Zoon Mousetrap Vehicle (Video) 43
Dr. Zoon Raven (Video) 83
Dr. Zoon Ray Catcher Vehicle (Video) 53
Dr. Zoon Solar Designers (Video) 54
Dr. Zoon Stratoblaster (Video) 75
Dr. Zoon Straw Structures (Video) 65
Dr. Zoon Toothpick Bridges (Video) 67
Dr. Zoon Tower Building (Video) 73
Draw Cars Like a Pro (Book) 45
Drawing Tools 97
Dynamo Flashlight (Kit) 58
Earhart, Amelia (Book) 88
Early Simple Machines Set 32, 90
Early Simple Machines Teacher's Guide . 32, 90
Early Structures Set 66, 96
Earth's Moon (Video) 76
Economy Tire Pump 74
Edison AC/DC (Ver. 2.0) 61
Edison DC (Software) 61
Edison Effect Video Series 41
Edison Electronics (Ver. 3.0) 61
Edison, Thomas (Book) 61
Eiffel Tower (Video) 68
eLAB Renewable Energy Set 50
eLAB Starter Set 48
Electric Plates 108
Electricity & Magnetism (Book) 61
Electricity & Magnetism (CD-ROM & Book) . 59
Electricity Circuit Board 60
Electricity, Electro Wiz (Kit) 59
Electricity, Usborne (Book) 59
Electro Wiz Electricity (Kit) 59
Electro Wiz Magnetism (Kit) 59
Electronic Lab Kit 60
Electronic Scale 99
Electronics Software 61
Element, Sound 108
Elements for 779633 109
Elements for 979630 109
Elements for 979701 109
Elements, Mini Sets 109
Elements, Weight 110
Empire State Building (Video) 68
Encyclopedia, Usborne Science (Book) 19
Energy 61
Energy & Power, Usborne (Book) 55
Energy & Power: Environmental Facts & Experiments (Book) 55
Energy Concept Guide 49
Energy Set, Renewable – eLAB 50
Energy/Work/Power eLAB, Activity Pack . 49
Environmental Facts & Experiments (Book) 55
Equilibrium & Materials (Video) 68
Extenders 109
Farm, LEGO DUPLO 93
Farm Animals, LEGO DUPLO 105
Field Guide to Metrics (Book) 40
Film (Book) 62
Fishline, 20# 101
Fittings & Lamps 108
Flags & Flames Decals 45
Flames Decals 45
Flashlight, Dynamo (Kit) 58
Flights of Imagination (Book) 82
Fliptop Playtable 86
Fluid Power (Video) 57
Flying Machine (Book) 47
Fold & Race Ramp 44
Fold-N-Roll Racer Kit 46
Fold-N-Roll Templates 46
Fold-N-Roll (Video) 46
Ford Template 44
Formula 1 Fold-N-Roll Templates 46
Fractions Explore-A-Pak 40
French Fries 77
Fun Time Gears Set 33, 91
Fun Time Gears II Set 33, 91
Fun Time Gears Teacher's Guides 33, 91
Fun with Architecture CD-ROM . 69
Fun With Architecture Stamp Set 69
Fun With Stars Stencils 89
Fun With Sun, Star & Moon Stencils 89
Gadgets & Gizmos CD-ROM 38
Gear and Worm Racks 110
Gear Block, Yellow 108
Gear Pkg, A (Combo) 39
Gear Pkg, B (Combo) 39
Gear Pkg, Bevel-Worm-Rack 39
Gear Pkg, C (Combo) 39
Gear Pkg, D (Combo) 39
Gear Pkg, Pinion 39
Gear Rack, Worm 110
Gear Reduction Motor 14, 108
Gear Wheels 110
Gear, 8-Tooth Spur 107
Gear, 14- Tooth Bevel 107
Gears Class Pack 29
Gears for ESM 110
Gears Mini Set 29
Gears Teacher's Guide 29
Gears Teacher's Guide – Spanish 29
Gears, Differentials 108
Gears, Fun Time 33, 91
Geometry Set 97
Gizmos & Gadgets CD-ROM 38
Glider, Balsa 83
Glider, Star 83
Gliders 82-83
Globe, Inflatable 88
Gloves, Youth 99
Glue 77, 101
Glue Bottles w/Lids, 2 oz 101
Glue Gun, Cool-Melt 77
Glue Slugs, Low Temp 77
Glue, HD Bond 101
Gold Bridge Building Medal 73
Gore Pattern Template 81
Gothic Cathedrals (Video) 68
Grand Coulee Dam (Video) 68
Green Glue 101
Green Storage Bin 93
Green Vinyl Tape 100
GT-F Racer Wheel 98
GT-R Racer Wheel 98
Guide To Scale & Structure (Book) 65
Handles & Pulleys 110
Harbor, LEGO BASIC 93
HardHat (CD-ROM) 92
Hartman Racer Explore-A-Pak 46
HD Bond Glue, 2 oz 101
History Of Architecture Engineering (Video) 68
History Of The Laser (Poster) 63
Home, LEGO DUPLO 87, 105
Hook-and-Loop Fastener 100
Hot Air Balloon Design & Make (Video) . . . 81
Hot Air Balloon Explore-A-Pak 80
Hot Air Balloon Student's Guide 81
Hot Air Balloon Teacher's Guide 81
Hot-Air Balloon Launcher 80
How Does A Laser Work (Poster) 63
How Things Work (CD-ROM) 87, 92
How To Be An Inventor (Book) 39
How to Draw Cars Like a Pro (Book) 45
Hub, Wheel 106
Hubs & Tires 110
Hull Designer Tool Set 85
Humidity Sensor 13
Hyperpeppy Robot (Kit) 23
Ice Cream Sandwich 77
Inclined Plane (Poster) 37
Indoor Balloon Tester 81
Inflatable Space Shuttle 88
Inflatable Stellar Globe 88
Infrared Transmitter & Cable (Pack) 14
Intelligent House 10, 11
Interface Cable 19
Interface, Serial 19
Interlocking Cubes 99
Intro To Air Power – Pneumatics I 56
Inventing Stuff (Book) 41
Invention & Discovery (Book) 41
Invention Book 33, 91
Invention Explore-A-Pak 40
Invention Studio (CD-ROM) 37
Invention, Eyewitness (Book) 41
Inventor's Workshop (Book) 41
Investigator Add-On 12, 15
Investigator Software 12
Investigator Teacher's Guide 12
IR Tower 14
Jumbo Craft Sticks 101
Jupiter (Video) 76
Jupiter, Space Explores (Book) 76
Kaleidoscope Kit 62
Kazoon Kite Video 82
Kestral Pocket Wind Meter 77
Kite Explore-A-Pak 82
Kite Kit 82
Kite String 100
Kites For Everyone (Book) 82
Laminated Table Cover 86
Lamp Brick, 9V 14, 107
Lamps & Fittings 108
Laser Diode Module 63
Laser Light Kit 63
Laser Poster Set 63
Lasers: Career Opportunity (Poster) 63
Lasers, Usborne (Book) 63
Launcher, AquaPort 74
Launcher, Hot-Air Balloon 80
Launcher, Straw Rocket 78
Leads, Assorted Colored 99
Leads, Connecting 108
Learn Laser Safety (Poster) 63
Learning to Solder Video 60
LEGO Action Wheelers Large Set 103
LEGO Design Challenges 19
LEGO Designer (CD-ROM) 34
LEGO Designer Class Pack 34
LEGO Designer Software Site License 34
LEGO Model Building (Software) 34
LEGO Sensor Pack 14
LEGO Soft Starter Set 104
LEGO Studios Camera and Software 35
Let's Go Flying Kids (Video) 88
Letters & Numbers 95
Letters, LEGO DUPLO 95
Lever Arm 42
Lever (Poster) 31, 37
Levers Class Pack 30
Levers Mini Set 30
Levers Teacher's Guide 30
Levers Teacher's Guide – Spanish 30
Light Sensor 14, 19, 108
Light Twine 100
Light, 9V 14, 107
Lights 108
Line Tracker Robot 23
Linkages & Cams 108
Links, Chain 110
Links, Conveyor Belt 110
Lite Flite Wheels 98
Little Forest Friends, LEGO DUPLO 105

116 General Index

Loads On Buildings (Video) 68
Low-Melt Glue Gun 77
Low-Melt Glue Slugs 77
Lunar Rover 22
Machines (Book) 31
Machines & Mechanisms Concept Guide . . 25
Machines, Motorized 26
Machines, Usborne (Book) 33, 91
Magic School Bus (CD-ROM) 89
Magnet (Kit) 59
Magnet Book 59
Magnet Discovery Kit 58
Magnetism, Electro Wiz 59
Make It Work! Machines (Book) 29
Manifold Accessory 74
Mars (Video) 76
Mars Rover 16
Mars, Space Explorers (Book) 76
Mars: A Panoramic Vista (Poster) 17
Mars: Past, Present, Future (Video, CD-ROM) 17
Masking Tape 100
Materials & Equilibrium (Video) 68
Math & Children (Video) 68
Me & My Place In Space (Book) 89
Measuring Fractions Explore-A-Pak 40
Mechanical Devices For The Electronics Experimenter (Book) 25
Mechanical Engineering Activity Pack 25
Mechanical Engineering Set 24
Medals, Bridge Building 73
Medium Bulk, DUPLO BASIC 104
Mercury (Video) 76
Mercury, Space Explorers (Book) 76
Metric Field Guide 40
Metric Scale 97
Micromotor 14, 108
Microscopes & Magnifying Lenses (Book) . . 62
Mini Goggles 99
Mini Set, Gears 29
Mini Set, Levers 30
Mini Set, Pulleys 31
Mini Set, Wheels & Axles 28
Model Airplanes 82, 83
Model Bridges (Book) 71
Model Building Software 34
ModelSmart 73
Modern Marvel Videos 68
Monofilament Line 101
Moo Magnet (Kit) 59
Moon, Space Explorers 76
Mosaics, LEGO DUPLO 94
Motion Sensor 13
Motor 280 54
Motor 385 54
Motor 500 54
Motor w/Gear Reduction 14, 108
Motor, 9V 108
Motor, Micro 14, 108
Motor, Simple Machines 26
Motorized Machines Pack 26
Motorized Simple Machines Set 26
Mount Rushmore (Video) 68
Mounting Clip, Syringe 57
Mouse Trap Science Is Fun! (Book) 42
Mousetrap Car Kit 42
Mousetrap Car Packs 42
Mousetrap Cars (Book), Student 43
Mousetrap Cars Teacher's Guide 43
Mousetrap T-Shirt 43
Mousetrap Vehicle Demo Kit 43
Mousetrap Vehicle Video 43
Mousetraps 42
Mr. Circuit Lab II 60
Mural, Balloons in Flight 81
Mural, Shuttle 77
Neat Stuff Decals 45
Neon Blue Straws 65, 100
Neptune (Video) 76
Neptune, Space Explorers (Book) . 76
Nine-Volt Battery 23
Numbers & Letters, LEGO 95
Numbers, LEGO DUPLO 95
Numerals Decals 45
O-ring Tire 106
Occupations, Children's Dictionary of 93
Ocean Liners 68
Only Part Missing Is You (Poster) 21
Oslo Tools & Gadgets (CD-ROM) 27, 31
Paint, Acrylic 98
Panama Canal (Video) 68
Panavise 85
Panel, Solar 54
Panoramic Vista of Mars (Poster) 17
Paper Airplanes 83
Paper Brads 100
Paper Bridges (Book) 73
Paper Racer Kit 46
Paper Structures (Video) 68
Paper-Covered Styrofoam 70
Past, Present, Future - Mars (CD-ROM, Video) 17
Peg, Connector 107
People, World, LEGO DUPLO 104
pH Sensor 13
Photography (Book) 62
Photovoltaic Panels 54
Pin-Hole Camera 62
Pinion Gear Pkg 39
Pink Glue 101
Pinstripes (Decals) 45
Pioneers of Flight (Kit) 83
Pipe Cleaners 100
Pitsco Bridge Book 71
Plane (Poster) 37
Plane Art (Decals) 45
Plastic Gears 39, 54
Plastic Wheels 42
Plates, 1 x 2 Blue 106
Plates, Blue 109
Plates, Electric 108
Plates, Green Building 109
Plates, LEGO DUPLO Building 104
Plates, LEGO DUPLO White (4) 104
Plates, Red 109
Plates, Yellow 109
Playtable, Flip-Top 86
Playwall 94
Pluto (Video) 76
Pluto, Space Explorers (Book) 76
Pneumatics I Pack 56
Pneumatics I: Intro to Air Power (Set) 56
Pneumatics II 57
Pneumatics II Pack 57
Pneumatics Circuit 110
Pneumatics Pump & Cylinder 110
Pneumatics Teacher's Guide 57
Pneumatics Teacher's Guide – Spanish 57
Pocket Wind Meter 77
Popsicle™ Sticks 101
Port Pump 74
Portable Wind Meter 80
Poster Tack 78
Problem-Solving (Poster) 36
Programmer (CD-ROM) 15
Programmer Site License 15
Programmer Software 15
Programmer Software – Spanish 15
Propane Cylinder 80
Protemp Sensor 13
Protractor 97
Pulley (Poster) 31, 37
Pulley Wheel, Medium 106
Pulley Wheel, Small 107
Pulleys Class Pack 31
Pulleys Mini Set 31
Pulleys Teacher's Guide 31
Pulleys Teacher's Guide – Spanish 31
Pulleys, Assorted 110
Pulling & Pushing (Book) 45
Pump & Cylinder, Small Pneumatic 110
Pump for AquaPort 74
Pumper, The 77
Push Train, LEGO DUPLO 95
Pushing & Pulling (Book) 45
Quarter Pounder Fold-N-Roll Templates . . . 46
R2K Bottle Rocket Classroom Pak 75
R2K Bottle Rocket Kit 75
Rack Gear 39
Rails, LEGO DUPLO 104
Ramp, Fold & Race 44
Raven Kit 83
Raven Teacher Demo Kit 83
Raven (Video) 83
Ray Catcher Deluxe Power Pak 53
Ray Catcher Power Pak 53
Ray Catcher Solar Panel 53
Ray Catcher Sprint Deluxe Kit 52
Ray Catcher Sprint Kit 52
Ray Catcher (Video) 53
RCX Brick 14
RCX Remote Control 15
Rechargeable Batteries 99
Red Beams 106, 110
Red Bricks 106
Red Plates 109
Red Roadster Fold-N-Roll Templates 46
Red Rover II 16
Red Storage Bin 93
Red Vinyl Tape 100
Red/Yellow Dagger Fold-N-Roll Templates 46
Remote Control 15
Renewable Energy, eLAB Activity Pack 51
Renewable Energy Set, eLAB 50
Resin Solder 60
Resource Set, Technology 103
Road Signs, LEGO System 93
Roadplates 103
ROBOLAB 4-15
ROBOLAB 1.5 Software 15
ROBOLAB 2.0 Software 12
ROBOLAB Activity Pack 5
ROBOLAB Activity Pack – Spanish 5
ROBOLAB Getting Started Teacher's Guide 12, 15
ROBOLAB Getting Started Teacher's Guide – Spanish 12, 15
ROBOLAB Getting Started 2 Teacher's Guide 12
ROBOLAB Intelligent House Activity Pack . . 11
ROBOLAB Intelligent House Building Set . . 10
ROBOLAB Intelligent House Conversion Pack 11
ROBOLAB Investigator Add-On 12, 15
ROBOLAB Investigator CD-ROM Teacher's Guide & Adapter 13
ROBOLAB Investigator Site License 12
ROBOLAB Investigator Software 12
ROBOLAB Programmer CD-ROM & User's Guide 15
ROBOLAB Programmer Site License 15
ROBOLAB Programmer Site License – Spanish 15
ROBOLAB Programmer Software 15
ROBOLAB Programmer Software – Spanish 15
ROBOLAB Remote Control 15
ROBOLAB Starter Building Set 5
ROBOLAB Starter System 4
Robot Arm 20

Robot Poster Set 21
Robot, Brutus 20
Robot, Cyclone 21
Robot, Hyperpeppy 23
Robot, Line Tracker 23
Robot, Rooster 22
Robot, Spider 23
Robotics Concept Guide 5
Robotics, Usborne (Book) 21
Rocket Kits 75
Rocket Launcher, AquaPort 74
Rocket Men (Video) 79
Rocket Ship Bulletin Board Set 79
Rocketry Stability Program (Software) 77
Rockets (Poster) 78
Roof Tiles, LEGO System 102
Rooster Robot 22
Rover Tire 106
Rover, Building (Video) 17
Rover, Lunar 22
Rover, Programmable 22
Rubber Band Airplane 83
Rubber Band Variety Pack 101
Rubber Bands & String 110
Rubber Bands, Wide 53, 101
Rulers 97
Safe-T Compass 97
Saturn (Video) 76
Saturn, Space Explorers (Book) 76
Scale & Structure 65
Scale, Electronic 99
Scale, Pro Ruler 97
Science Encyclopedia, Usborne (Book) 19
Science Fair Electricity (Book) 61
Science Fair Energy (Book) 61
Science Olympiad Structure Tester 71
Scientific Method (Video) 36
Screw (Poster) 37
Sensor Adapter, DCP 13
Sensor Pack, DCP 13
Sensor Pack, LEGO 14
Sensor, Air Pressure 13
Sensor, Angle 14, 19, 108
Sensor, Humidity 13
Sensor, Light 14, 19, 108
Sensor, Motion 13
Sensor, pH 13
Sensor, Protemp 13
Sensor, Sound 13
Sensor, Temperature 14, 108
Sensor, Touch 14, 108
Sensor, Voltage 13
Separator, Brick 108
Serial Interface & Adapter 19
Short Axles & Extenders 109
Shuttle In Orbit Mural 77
Shuttle, Inflatable 88
Signs, Traffic 93
Silver Bridge Building Medal 73
Simple Circuit Board 60
Simple Machines (CD-ROM) 36
Simple Machines Activity Pack 27
Simple Machines And Work Series (Video) . . 37
Simple Machines Made Simple (Book) 36
Simple Machines Middle School Pack 102
Simple Machines Set 26
Simple Machines, Early 32, 90
Simple Machines, Motorized 26
Simple Machines, Technic I 102
Site License, Control Lab 19
Site License, Investigator 12
Site License, Programmer 15
Site License, Programmer – Spanish 15
Skill Sticks 101
Skyscrapers (Video) 68
Skyscrapers: Fold-Out Book 69
Small Pulleys & Handles ESM 110
Smithsonian Guides: Aviation (Book) 83
Smorgasbord, Bottle Rocket 75
Soft Starter Set, LEGO 104
Solar Add-On 27
Solar Battery 47
Solar Cell, LEGO 51
Solar Cells 51, 54
Solar Designer's Kit 54
Solar Designers (Video) 54
Solar Energy, Interactions (Video) 53
Solar Energy, Science In Action (Video) 55
Solar Panel 54
Solar System (CD-ROM, Book) 79
Solar System (Videos) 76
Solar Wheels with O-Rings 53
SolarPak 54
Solder 60
Soldering Iron & Hot Knife 60
Sound Element 108
Sound Sensor 13
Space Explorers (Books) 76
Space Explorers Package 76
Space Rockets (Poster) 78
Space Shuttle, Inflatable 88
Space Videos 76
Special Elements 109
Spectrum Links™ 112-113
Spectrum System™ 124-125
Speed Computer 27
Spider Robot (Kit) 23
Spiderwire 98
Sponge Balls 100
Sponge Wheels 98
Stability Program, Rocketry 77
Star Glider 83
Stars Stencils 89
Starter Building Set, ROBOLAB 5
Starter Pack, Control Lab 18
Starter Set, eLAB 48
Starter System, ROBOLAB 4
Statue Of Liberty (Video) 68
Stellar Globe 88
Stencils, Stars 89
Stencils, Sun, Star & Moon 89
Sticky Tack 78
Stir Sticks, Wooden 101
Storage Bins 86, 93
Stratoblaster Kit 75
Stratoblaster (Video) 75
Straw Rocket Launcher 78
Straw Structures (Video) 65
Straws, 1/8" 65, 100
Straws, Art 98, 100
Straws, Clear 65, 78, 100
Straws, Long 65, 100
Straws, Neon Blue 65, 100
Straws, White & Red Stripe 65, 78, 100
String & Rubber Bands 110
String, Kite 100
Striped Straws 65, 78, 100
Structural Certificate 73
Structure Building (Software) 73
Structure Sticks 67
Structure Tester, di2000 72
Structures (Book) 65
Structures Activity Pack 65
Structures Concept Guide 65, 66, 96
Structures Set 64
Structures Set, Early 66, 96
Structures, Paper (Video) 68
Styrofoam™, Paper-Covered 70
Swing Bridges (Video) 68
Switch On! (Set) 58
Syringe Mounting Clip 57
Syringes 57
T-Shirt 43
T-Shirt, Mousetrap 43
Table Cover, Laminated 86
Tank Template 44
Tape, Double-stick 57, 100
Tape, Duct 100
Tape, Masking 100
Teacher's Guide,
Early Simple Machines 32, 90
Teacher's Guide, Fun Time Gears 33, 91
Teacher's Guide, Gears 29
Teacher's Guide, Gears – Spanish 29
Teacher's Guide, Getting Started 2 12
Teacher's Guide, Levers 30
Teacher's Guide, Levers – Spanish 30
Teacher's Guide, Mousetrap Vehicle 43
Teacher's Guide, Pneumatics 57
Teacher's Guide, Pneumatics – Spanish 57
Teacher's Guide, Pulleys 31
Teacher's Guide, Pulleys – Spanish 31
Teacher's Guide, ROBOLAB
Getting Started 12, 15
Teacher's Guide, ROBOLAB
Getting Started – Spanish 12, 15
Teacher's Guide, ROBOLAB
Getting Started 2 12
Teacher's Guide, Wheels & Axles 28
Teacher's Guide,
Wheels & Axles – Spanish 28
Teacher's Guides, Space Explorers 76
Team Challenge Introductory Activity Pack . . 7
Team Challenge Building Set 7, 16-17
Team Challenge, Activity Pack 7
Technic I Middle School Pack 102
Technic I Simple Machines 102
Technology Resource Set 103
Temperature Sensor 14, 108
Template, Gore Pattern 81
Tester, Bridge 71
Tester, Digital Interface 72
Tester, Indoor Balloon 81
Thomas Edison (Book) 61
Tiles, Roof 102
Timber Cutter 71
Timber Cutter Blade 71
Timber Tester 72
Tire, O-ring 106
Tire, Rover 106
Tires & Hubs 110
To Space & Back (Book) 79
Tool Set, Pitsco 39
Toothpick Bridges (Book) 67
Toothpick Bridges (Video) 67
Toothpicks 67
Torsion Wheel 42
Touch Sensor and Leads 9V 14, 108
Tower Building (Video) 73
Tower, IR 14
TowerPak 72
Towers (Book) 73
Town, DUPLO BASIC 86
Town, LEGO BASIC 87
Train (Book) 47
Transcontinental Railroad (Video) 68
Transmitter & Cable (Pack) 14
Transportation Set, LEGO DUPLO 95
Traps, Mouse 42
Tubes, DUPLO BASIC 92
Tubing Cutter 42
Tubing 57
Tunnels (Video) 68
Turbo 2000 Kit 47
Turntables, Large 110
Twine 100
Unconventional Invention (Book) 41
Up With Balloons (Video) 81
Uranus (Video) 76
Uranus, Space Explorers (Book) 76
USB Adapter 14

Uses of the Laser Are All Around Us (Poster). 63
Vehicle, Mousetrap 43
Venus (Video) 76
Venus, Space Explorers (Book) 76
Vinyl Tape 100
Vise 85
Voltage Sensor 13
Wall, Play 94
Washers, Bevel 42
Waxed Paper 70
Way Things Work (Book) 36
Way Things Work 2.0 (CD-ROM) 36
Wedge (Poster) 37
Weight Elements 110
Wheel (Poster) 29, 37
Wheel Hub, Small Gray 106
Wheel, Pulley – Medium 106
Wheel, Pulley – Small 107
Wheel, Torsion 42
Wheels & Axles Class Pack 28
Wheels & Axles Mini Set 28
Wheels & Axles Teacher's Guide 28
Wheels & Axles Teacher's Guide – Spanish . . 28
Wheels, Card 44, 101
Wheels, CD 42
Wheels, Gear 110
Wheels, LEGO System 107
Wheels, Lite Flite 98
Wheels, Plastic 42
White Band 107
Whitewings Competition Contest (Kit) 83
Whitewings Pioneers Of Flight (Kit) 83
Why Do We Use Robots? (Poster) 21
Wind Generator 55
Wind Meter 77
Windows & Doors 102
WinDynamo Wind Generator 55
Wire, 22-Gauge Red 99
Women Scientists and Inventors (Book) 41
Wood Dowel 101
Wood Glue 101
Wood Pieces 73
Wood Sticks 101
Wood, Balsa 73
Workers, Community 102, 105
World People, LEGO DUPLO 104
Worm Gear 39
Worm Gears, Gear Racks 110
Xircom USB Adapter 14
Yellow Band 107
Yellow Gear Block 108
Yellow Plates 109
Yellow Storage Bin 93
Yellow Vinyl Tape 100
Young Inventors At Work (Book) 38
Zoo Animals, LEGO DUPLO 105
Zoo, LEGO BASIC 102

TOPICAL INDEX

Books

Careers
Children's Dictionary Of Occupations . . 93

Electricity & Magnetism
Awesome Experiments in Electricity & Magnetism 61
Batteries, Bulbs & Wires 58
Electricity, Usborne 59
Introduction To Electronics 61
Magnet Book 59
Mechanical Devices for the Electronics Experimenter 25
Science Fair Electricity 61
Thomas Edison 61

Energy
Energy & Power, Usborne 55
Energy & Power: Facts & Exp. 55
Energy Concept Guide 49
Environmental Facts & Experiments . . 55
Science Fair Energy 61

Flight
Amelia Earhart 88
Bottle Rockets Book 77
Building Kites 82
Flights Of Imagination 82
Hot Air Balloon Student's Guide 81
Hot Air Balloon Teacher's Guide 81
Kites For Everyone 82
Smithsonian Guides: Aviation 83

Inventions
Children's Engineering 38
Design Technology: Children's Engineering 38
How To Be An Inventor 39
Inventing Stuff 41
Invention & Discovery 41
Invention Book 33, 91
Invention, Eyewitness 41
Inventors Workshop 41
Mechanical Devices for the Electronics Experimenter 25
Mouse Trap Science Is Fun! 42
Mousetrap Cars, Student 43
Mousetrap Cars Teacher's Guide 43
Unconventional Invention 41
Way Things Work, New 36
Women Scientists and Inventors 41
Young Inventors At Work 38

Light
Film 62
Lasers, Usborne 63
Microscopes – Magnifying Lenses 62
Photography 62

Mechanisms
Brick Layers AIMS Binder 102
Brick Layers II 27
Fun Time Gears Teacher's Guide . . 33, 91
Machines 31
Machines, Usborne 33, 91
Make It Work! Machines 29
Mousetrap Cars, Student 43
Mousetrap Cars Teacher's Guide 43
Simple Machines Made Simple 36

Metrics
Field Guide To Metrics 40

Robotics
Control Lab Curriculum Pack 19
Design Challenges, LEGO 19
Mechanical Devices for the Electronics Experimenter 25
ROBOLAB Getting Started Teacher's Guide 12, 15
ROBOLAB Getting Started Teacher's Guide – Spanish . . . 12, 15
ROBOLAB Getting Started 2 Teacher's Guide 12
Robotics Concept Guide 5
Robotics, Usborne 21
Team Challenge Activity Pack 7

Science
Batteries, Bulbs & Wires 58
Children's Engineering 38
Constructions for Children 92
Design Technology: Children's Engineering 38
Electricity, Usborne 59
Energy & Power, Usborne 55
Energy & Power: Facts & Exp. 55
Energy Concept Guide 49
Environmental Facts /Experiments . . . 55
Field Guide To Metrics 40
Film 62
Introduction To Electronics 61
Lasers, Usborne 63
Machines 31
Machines 33, 91
Magnet Book 59
Make It Work! Machines 29
Microscopes – Magnifying Lenses 62
Mouse Trap Science Is Fun! 42
Photography 62
Science Encyclopedia, Usborne 19
Science Fair Electricity 61
Science Fair Energy 61
Simple Machines Made Simple 36
Thomas Edison 61

Space
Fun With Stars Stencil 89
Fun With Sun, Star & Moon 89
Me & My Place In Space 89
Space Explorers Jupiter 76
Jupiter Teacher's Guide 76
Space Explorers Mars 76
Mars Teacher's Guide 76
Space Explorers Mercury 76
Mercury Teacher's Guide 76
Space Explorers Moon 76
Moon Teacher's Guide 76
Space Explorers Neptune 76
Neptune Teacher's Guide 76
Space Explorers Package 76
Space Explorers Pluto 76
Pluto Teacher's Guide 76
Space Explorers Saturn 76
Saturn Teacher's Guide 76
Space Explorers Uranus 76
Uranus Teacher's Guide 76
Space Explorers Venus 76
Venus Teacher's Guide 76
To Space & Back 79

Structures
Amazing Buildings 69
Architecture Is Elementary 69
Bridge Building Book 70-71
Bridges 66, 96
Building Toothpick Bridges 67
Cranes 73
Guide To Scale & Structure 65
Model Bridges Book 71
Paper Bridges 73
Scale & Structure 65
Skyscrapers: Fold-Out Book 69
Structures 65
Structures Concept Guide 65, 66, 96
Towers 73

Transportation
Boat 47
Car 47
Cutaway Cars 45
Flying Machine 47
How to Draw Cars Like a Pro 45
Pushing & Pulling 45
Train 47

Curriculum

Activity Packs

Amusement Park Activity Pack 9
Cities & Transportation Activity Pack . . 8
Energy/Work/Power eLAB, Activity Pack 49
Mechanical Engineering Activity Pack . . 25
Renewable Energy, eLAB Activity Pack 51
ROBOLAB Activity Pack 5
ROBOLAB Activity Pack – Spanish 5
ROBOLAB Intelligent House Activity Pack 11
ROBOLAB Intelligent House Conversion Pack 11
Simple Machines Activity Pack 27
Simple Machines Activity Pack – Spanish 27
Structures Activity Pack 65
Team Challenge Activity Pack 7
Team Challenge Introductory Activity Pack 7

Other

Brick Layers 102
Brick Layers II 27
Control Lab 19
Design Challenges, LEGO 19
Energy Concept Guide 49
Field Guide To Metrics 40
Guide To Scale & Structure 65
Hot Air Balloon Student's Guide 81
Machines & Mechanisms Concept Guide 25
Measuring Fractions Explore-A-Pak . . 40
Mouse Trap Science Is Fun! 42
Mousetrap Cars, Student 43
ROBOLAB Investigator CD-ROM, Teacher's Guide & Adapter 13
Robotics Concept Guide 5
Spectrum Links™ 112-113
Spectrum System™ 124-125
Structures Concept Guide 65, 66, 96

Spanish

Gears Teacher Guide – Spanish 29
Levers Teacher Guide – Spanish 30
Motorized Simple Machines Activity Pack – Spanish 27
Pneumatics Teacher's Guide – Spanish 57
Pulleys Teacher Guide – Spanish 31
ROBOLAB Activity Pack – Spanish 5
ROBOLAB Programmer Teacher's Guide – Spanish 15
Wheels & Axles Teacher Guide – Spanish 28

Teacher Guides

Boat Design & Testing: From AquaTrak to the Oceans 85
Early Simple Machines Teacher's Guide 32, 90
Fun Time Gears Teacher's Guide . . 33, 91
Fun Time Gears II Teacher's Guide . . 33, 91
Gears Teacher Guide 29
Gears Teacher Guide – Spanish 29
Hot Air Balloon Teacher's Guide 81
Levers Teacher Guide 30
Levers Teacher Guide – Spanish 30
Mousetrap Cars Teacher's Guide 43
Pneumatics Teacher's Guide 57
Pneumatics Teacher's Guide – Spanish 57
Pulleys Teacher Guide 31
Pulleys Teacher Guide – Spanish 31
ROBOLAB Getting Started Teacher's Guide 12, 15
ROBOLAB Getting Started Teacher's Guide – Spanish . . . 12, 15
ROBOLAB Getting Started 2 Teacher's Guide 12
Space Explorers Teacher's Guides 76
Wheels & Axles Teacher Guide 28
Wheels & Axles Teacher Guide – Spanish 28

Early Learning

Airport, LEGO BASIC 88-89
BASIC Tubes, LEGO DUPLO 92
Big Rocket Ship Bulletin Board Set 79
Circus, DUPLO BASIC 86
Community Workers, LEGO DUPLO 105
Community Workers, LEGO System . 102
Early Simple Machines Set 32, 90
Early Simple Machines Teacher's Guide 32, 90
Early Structures Set 66, 96
Farm, LEGO DUPLO 93
Farm Animals, LEGO DUPLO 105
Fliptop Playtable, Large Green 86
Fliptop Playtable, Large Red 86
Fun Time Gears 33, 91
Fun Time Gears II Set 33, 91
Fun Time Gears Teacher's Guide . . 33, 91
Fun Time Gears II Teacher's Guide . . 33, 91
Harbor, LEGO BASIC 93
Home, LEGO DUPLO 87, 105
Letters, LEGO DUPLO 95
Little Forest Friends, LEGO DUPLO . . 105
Mosaics, LEGO DUPLO 94
Numbers, LEGO DUPLO 95
Numbers & Letters, LEGO 95
Playtable 86
Playwall 94
Push Train, LEGO DUPLO 95
Rails, LEGO DUPLO 104
Road Signs, LEGO System 93
Town, DUPLO BASIC 86
Town, LEGO BASIC 87
Transportation Set, LEGO DUPLO 95
World People, LEGO DUPLO 104
Zoo, LEGO BASIC 102
Zoo Animals, LEGO DUPLO 105

Equipment

A.T.A.K. (AquaTrak Accessory Kit) . . . 85
Action Contraptions, LEGO 37
Air Pressure Sensor 13
Airport Sets 88-89
Amusement Park Set 9
AquaPort Launcher System 74
AquaTrak 84
BASIC Tubes, LEGO DUPLO 92
Battery Charger 99
Brutus Robotic Arm 20
Circus, DUPLO BASIC 86
Cities & Transportation Set 8
Community Workers 102, 105
Construction Caddy 70
Control Lab Building Set 19
Cubes, 1-Gram Interlocking 99
Cyclone Robot 21
Da Camera Pak 62
DCP Sensor Pack 13
Deluxe Port Pump 74
di2000 Structure Tester 72
Dynamo Flashlight 58
Early Simple Machines Set 32, 90
Early Structures Set 66, 96
eLAB Renewable Energy Set 50
eLAB Starter Set 48
Economy Tire Pump 74
Electricity Circuit Board 60
Electronic Scale 99
Farm, LEGO DUPLO 93
Farm Animals, LEGO DUPLO 105
Fold & Race Ramp 44
Fun Time Gears II Set 33, 91
Gears Class Pack 29
Gears Mini Set 29
Harbor, LEGO BASIC 93
Hot-Air Balloon Launcher 80
Home, LEGO DUPLO 87, 105
Humidity Sensor 13
Hyperpeppy Robot (Kit) 23
Indoor Balloon Tester 81
Inflatable Space Shuttle 88
Inflatable Stellar Globe 88
Infrared Transmitter & Cable 14
Kestrel Pocket Wind Meter 77
LEGO Studios Camera and Software . . 35
Letters, LEGO DUPLO 95
Levers Class Pack 30
Levers Mini Set 30
Line Tracker Robot 23
Little Forest Friends, LEGO DUPLO . . 105
Lunar Rover 22
Mechanical Engineering Set 24
Mosaics, LEGO DUPLO 94
Motion Sensor 13
Motorized Machines Pack 26
Motorized Simple Machines Set 26
Mousetrap Vehicle Demo Kit 43
Numbers, LEGO DUPLO 95
Numbers & Letters, LEGO 95
pH Sensor Adapter 13
Playtable 86
Playwall 94
Pneumatics I Class Pack 56
Pneumatics I: Intro to Air Power Set . . 56
Pneumatics II Pack 57
Pneumatics II 57
Portable Wind Meter 80
Protemp Sensor 13
Pulleys Class Pack 31
Pulleys Mini Set 31
Pumper, The 77
Push Train, LEGO DUPLO 95
Rails, LEGO DUPLO 104
Ray Catcher Solar Panel 53
RCX Brick 14
Red Rover II 16
Remote Control 15
Road Signs, LEGO System 93
ROBOLAB Intelligent House Building Set 10
ROBOLAB Starter System 4
Rooster Robot 22
Science Olympiad Structure Tester 71
Sensor Pack, LEGO 14
Serial Interface & Adapter 19
Simple Circuit Board 60
Simple Machines Middle School Pack . . 102
Simple Machines, Motorized 26
Simple Machines Set 26
Solar Add-On 27
Solar Cell – Junior Solar Sprint 53
Solar Cell – LEGO 51
Solar Cells 51, 53-54
Solar Battery 47
Solar Panels 51, 53-54
Solder Iron & Hot Knife 60
Sound Sensor 13
Speed Computer 27
Spider Robot 23
Straw Rocket Launcher 78
Structures Set 64
Team Challenge Building Set 7, 16-17
Technic I Simple Machines 102
Technology Resource Set 103
Timber Cutter 71
Timber Tester 72

120 Topical Index

Equipment (cont.)
Torsion Wheel . . . 42
Town Sets . . . 86-87
Transportation Set, LEGO DUPLO . . . 95
USB Adapter . . . 14
Voltage Sensor . . . 13
Wheels & Axles Class Pack . . . 28
Wheels & Axles Mini Set . . . 28
Wind Generator . . . 55
World People, LEGO DUPLO . . . 104
Zoo, LEGO BASIC . . . 102
Zoo Animals, LEGO DUPLO . . . 105

Kits
Boat Hull Design Kit . . . 85
Bottle Rocket Smorgasbord . . . 75
Blinky Robot Kit . . . 60
Delta Dart . . . 82
Dr. Zoon KaZoon Kite Kit . . . 82
Electro Wiz Electricity . . . 59
Electro Wiz Magnetism . . . 59
Electronic Lab Kit . . . 60
Fold-N-Roll Racer Kit . . . 46
Fun With Architecture Stamp Set . . . 69
Hartman Racer Explore-A-Pak . . . 46
Hyperpeppy Robot . . . 23
Kaleidoscope Kit . . . 62
Laser Diode Kit . . . 63
Laser Light Kit . . . 63
Line Tracker Robot . . . 23
Magnet Discovery Kit . . . 58
Moo Magnet Kit . . . 59
Mousetrap Car Kit . . . 42
Mousetrap Car Packs . . . 42
Mr. Circuit Lab II . . . 60
R2K Bottle Rocket Classroom Pak . . . 75
R2K Bottle Rocket Kit . . . 75
Raven Kit . . . 83
Raven Pack . . . 83
Raven Teacher Demo Kit . . . 83
Ray Catcher Deluxe Power Pak . . . 53
Ray Catcher Power Pak . . . 53
Ray Catcher Sprint Deluxe . . . 52
Ray Catcher Sprint Kit . . . 52
Solar Designer's Kit . . . 54
Spider Robot . . . 23
Stratoblaster Kit . . . 75
Star Glider . . . 83
Switch On . . . 58
Turbo 2000 Kit . . . 47
Whitewings Competition Contest . . . 83
Whitewings Pioneers Of Flight . . . 83

LEGO Dacta Products

Curriculum
Amusement Park Activity Pack . . . 9
Cities & Transportation Activity Pack . . 8
Control Lab Curriculum Pack . . . 19
Early Simple Machines Teacher's Guide . . . 32, 90
Energy Concept Guide . . . 49
Energy/Work/Power eLAB, Activity Pack . . . 49
Fun Time Gears Teacher's Guide . . 33, 91
Fun Time Gears II Teacher's Guide . . 33, 91
Gears Teacher Guide . . . 29
Gears Teacher Guide – Spanish . . . 29
Levers Teacher Guide . . . 30
Levers Teacher Guide – Spanish . . . 30
Mechanical Engineering Activity Pack . . 25
Pneumatics Teacher's Guide . . . 57
Pneumatics Teacher's Guide – Spanish . . . 57
Pulleys Teacher's Guide . . . 31
Pulleys Teacher's Guide – Spanish . . . 31
Renewable Energy, eLAB Activity Pack . . . 51
ROBOLAB Activity Pack . . . 5
ROBOLAB Activity Pack - Spanish . . . 5
ROBOLAB Getting Started Teacher's Guide . . . 12, 15
ROBOLAB Getting Started Teacher's Guide – Spanish . . . 12, 15
ROBOLAB Getting Started 2 Teacher's Guide . . . 12
ROBOLAB Intelligent House Activity Pack . . . 11
ROBOLAB Intelligent House Conversion Pack . . . 11
ROBOLAB Programmer Teacher's Guide – Spanish . . . 15
ROBOLAB Software Teacher's Guide . 15
Robotics Concept Guide . . . 5
Simple Machines Activity Pack . . . 102
Simple Machines Activity Pack – Spanish . . . 27
Spectrum Links™ . . . 112-113
Spectrum System™ . . . 124-125
Structures Activity Pack . . . 65
Structures Concept Guide . . . 65, 66, 96
Team Challenge Activity Pack . . . 7
Team Challenge Introductory Activity Pack . . . 7
Wheels & Axles Teacher Guide . . . 28
Wheels & Axles Teacher Guide – Spanish . . . 28

Sets
Action Contraptions, LEGO . . . 37
Airport, LEGO BASIC . . . 88-89
Amusement Park Set . . . 9
BASIC Tubes, LEGO DUPLO . . . 92
Brick Runner, DUPLO BASIC . . . 92
Circus, DUPLO BASIC . . . 86
Cities & Transportation Set . . . 8
Control Lab Building Set . . . 19
Control Lab Pack . . . 19
Control Lab Starter Pack . . . 18
Early Simple Machines Set . . . 32, 90
Early Structures Set . . . 66, 96
eLAB Renewable Energy Set . . . 50
eLAB Starter Set . . . 48
Farm, LEGO DUPLO . . . 93
Fun Time Gears II Set . . . 33, 91
Fun Time Gears Set . . . 33, 91
Gears Class Pack . . . 29
Gears Mini Set . . . 29
Harbor, LEGO BASIC . . . 93
Home, LEGO DUPLO . . . 87, 105
LEGO Action Wheelers Large Set . . . 103
LEGO Soft Starter Set . . . 104
LEGO Studios Camera and Software . . 35
Letters, LEGO DUPLO . . . 95
Levers Class Pack . . . 30
Levers Mini Set . . . 30
Mechanical Engineering Set . . . 24
Mosaics, LEGO DUPLO . . . 94
Motorized Machines Pack . . . 26
Motorized Simple Machines Set . . . 26
Numbers, LEGO DUPLO . . . 95
Numbers & Letters, LEGO . . . 95
Playwall . . . 94
Pneumatics I Class Pack . . . 56
Pneumatics I: Intro to Air Power Set . . 56
Pneumatics II . . . 57
Pneumatics II Pack . . . 57
Pulleys Class Pack . . . 31
Pulleys Mini Set . . . 31
Push Train, LEGO DUPLO . . . 95
Red Rover II . . . 16
Road Signs, LEGO System . . . 93
ROBOLAB Intelligent House Building Set . . . 10
ROBOLAB Starter Building Set . . . 5
ROBOLAB Starter System . . . 4
Simple Machines Middle School Pack . . 102
Simple Machines Set . . . 26
Structures Set . . . 64
Team Challenge Building Set . . . 7, 16-17
Technic I Simple Machines . . . 102
Technology Resource Set . . . 103
Town, DUPLO BASIC . . . 86
Town, LEGO BASIC . . . 87
Transportation Set, LEGO DUPLO . . . 95
Wheels & Axles Class Pack . . . 28
Wheels & Axles Mini Set . . . 28
Zoo, LEGO BASIC . . . 102
Zoo Animals, LEGO DUPLO . . . 105

Spare Parts
AC Adapter . . . 14
Angle Sensor . . . 14, 19, 108
Axle, 3-Stud . . . 106
Axle, 4-Stud . . . 106
Axle, 6-Stud . . . 106
Axles for ESM . . . 109
Band, Blue . . . 107
Band, Large White . . . 107
Band, Small White . . . 107
Band, Yellow . . . 107
Baseplates, Large LEGO System . . . 103
Baseplates, Small LEGO System . . . 103
Battery Box w/Switch . . . 108
Beam, 1 x 2 Red . . . 106
Beams, Blue . . . 110
Beams, Red . . . 110
Belts for ESM . . . 110
Brick Separator . . . 108
Brick, 1 x 2 Red . . . 106
Bushing, Gray . . . 106
Cams & Linkages . . . 108
Capacitor . . . 51
Chain Links, Small . . . 110
Community Workers, LEGO DUPLO . 105
Community Workers, LEGO System . . 102
Connecting Leads . . . 108
Connector Peg 1-1/2" Dark Gray . . . 107
Connector Peg, Black . . . 107
Connector Peg, Grey . . . 107
Connectors & Bushings . . . 108
Control Lab Software DOS . . . 19
Control Lab Software Mac . . . 19
Conveyor Belt Links . . . 110
Differentials . . . 108
Doors & Windows, Large LEGO System . . . 102
Farm Animals, LEGO DUPLO . . . 105
Fliptop Playtable, Large Green . . . 86
Fliptop Playtable, Large Red . . . 86
Gear Block, Yellow . . . 108
Gear Racks, Worm Gears . . . 110
Gear Wheels, Large . . . 110
Gear Wheels, Small . . . 110
Gear, 14-Bevel . . . 107
Gear, 8-Tooth . . . 107
Gears for ESM . . . 110
Hubs & Tires . . . 110
Infrared Transmitter & Cable . . . 14
Interface Cable . . . 19
Just Bricks, LEGO BASIC . . . 103
Laminated Table Cover, Large . . . 86
Lamp, 9V . . . 14, 107
Lamps & Fittings . . . 108
LEGO Designer CD-ROM . . . 34
LEGO Designer Class Pack . . . 34
LEGO Designer Software Site License . . 34
Light Sensor 9V . . . 14, 19, 108
Little Forest Friends, LEGO DUPLO . . 105
Medium Bulk, DUPLO BASIC . . . 104
Micromotor 9V . . . 14, 108
Motor w/Gear Reduction 9V . . . 14, 108

LEGO Dacta Products (cont.)

Spare Parts (cont.)

Motor, 9V 108
O-ring Tire 106
Plate, LEGO DUPLO Building 104
Plates, 1 x 2 Blue 106
Plates, Black 109
Plates, Blue 106, 109
Plates, Electric 108
Plates, Green Building 109
Plates, LEGO DUPLO White (4) 104
Plates, Red 109
Plates, Yellow 109
Pneumatic Circuit 110
Pulley Wheel, Medium 106
Pulley Wheel, Small 107
Pulleys, Assorted 110
Pump & Cylinder, Small Pneumatic . . 110
Rails, LEGO DUPLO 104
RCX Brick 14
Remote Control 15
Roadplates 103
ROBOLAB Investigator Add-On . . 12, 15
ROBOLAB Investigator CD-ROM, Teacher's Guide & Adapter 15
ROBOLAB Investigator Site License . . 12
ROBOLAB Investigator Software 12
ROBOLAB Programmer CD & User's Guide 15
ROBOLAB Programmer Site License . . 15
ROBOLAB Programmer Site License – Spanish 15
ROBOLAB Programmer Software 15
ROBOLAB Programmer Software – Spanish 15
Roof Tiles, LEGO System 102
Rover Tire 106
Rubber Bands & String 110
Sensor Adapter, DCP 13
Sensor Pack, LEGO 14
Serial Interface & Adapter 19
Short Axles & Extenders 109
Simple Machines, Motorized 26
Small Pulleys & Handle ESM 110
Solar Add-On 27
Sound Element 108
Special Elements for 979630 109
Special Elements for 779633 109
Special Elements for 979701 109
Special Elements Mini Set 109
Speed Computer 27
Storage Bin, Large Red 93
Storage Bin, Medium Green 93
Storage Bin, Small Red 93
Storage Bin, X-Large Yellow 84, 93
Storage Bin, X-Small Yellow 93
Temperature Sensor 14, 108
Touch Sensor and Leads 14, 108
Turntables, Technic 110
Weight Elements 110
Wheel Hub, Small Gray 106
Wheels, LEGO System 107
World People, LEGO DUPLO 104

Packs

Balloon Car Explore-A-Pak 44
BridgePak, Balsa 70
BridgePak, Basswood 70
Car Builder, CD-ROM Lab Pack 47
Car Builder, CD-ROM School Pack . . . 47
Card Wheel Pack 44, 101
ChallengePak 38
Control Lab Starter Pack 18
Da Camera Expendables Pak 62
Da Camera Pak 62
DCP Sensor Pack 13
Delta Dart 82
eLAB Starter Set 48
Fold-N-Roll Racer Kit 46
Hartman Racer Explore-A-Pak 46
Hot-Air Balloon Explore-A-Pak 80
Invention Explore-A-Pak . . 40
Kite Explore-A-Pak 82
LEGO Designer Class Pack . 34
Measuring Fractions Explore-A-Pak 40
ModelSmart Lab Pack 7
ModelSmart School Pack 73
Motorized Machines Pack 26
Mousetrap Car Packs 42
Pneumatics I Pack 56
Pneumatics II Pack 57
R2K Bottle Rocket Classroom Pak 75
Raven Pack 83
Ray Catcher Deluxe Power Pak 53
Ray Catcher Power Pak 53
ROBOLAB Starter Building Set 5
ROBOLAB Starter System 4
Sensor Pack, LEGO 14
Simple Machines Middle School Pack . . 102
SolarPak Power Pak 54
Space Explorers Package 76
Star Glider 83
TowerPak, Balsa 72
TowerPak, Basswood 72

Pitsco Products

Books & Videos

Bottle Rocket (Video) 75
Bottle Rockets (Book) 77
Bridge Building (Book) 70-71
Cranes (Book) 73
Design Challenges, LEGO 19
Dr. Zoon Bridge Building (Video) 71
Dr. Zoon Fold-N-Roll (Video) 46
Dr. Zoon KaZoon Kite (Video) 82
Dr. Zoon Learning to Solder (Video) . . 60
Dr. Zoon Mousetrap Vehicle (Video) . . 43
Dr. Zoon Raven (Video) 83
Dr. Zoon Ray Catcher Vehicle (Video) . 53
Dr. Zoon Solar Designers (Video) 54
Dr. Zoon Stratoblaster (Video) 75
Dr. Zoon Straw Structures (Video) 65
Dr. Zoon Toothpick Bridges (Video) . . . 67
Dr. Zoon Tower Building (Video) 73
Field Guide To Metrics (Book) 40
Hot Air Balloon Design & Make (Video) 81
Hot Air Balloon Student's Guide 81
Hot Air Balloon Teacher's Guide 81
Model Bridges (Book) 71
Problem-Solving (Poster) 36
Space Explorers Jupiter 76
Jupiter Teacher's Guide 76
Space Explorers Mars 76
Mars Teacher's Guide 76
Space Explorers Mercury 76
Mercury Teacher's Guide 76
Space Explorers Moon 76
Moon Teacher's Guide 76
Space Explorers Neptune 76
Neptune Teacher's Guide 76
Space Explorers Pluto 76
Pluto Teacher's Guide 76
Space Explorers Saturn 76
Saturn Teacher's Guide 76
Space Explorers Uranus 76
Uranus Teacher's Guide 76
Space Explorers Venus 76
Venus Teacher's Guide 76
Space Explorers Package 76
Towers (Book) 73
Up With Balloons (Video) 81

Equipment

A.T.A.K. (AquaTrak Accessory Kit) . . . 85
AquaPort Launcher System 74
AquaPort Manifold Accessory 74
AquaTrak 84
Brutus Robotic Arm 20
Construction Caddy 70
Deluxe Port Pump 74
di2000 Structure Tester 72
Electricity Circuit Board 60
Fold & Race Ramp 44
Hot-Air Balloon Launcher 80
Hull Designer Tool Set 85
Indoor Balloon Tester 81
Lunar Rover 22
Rooster Robot 22
Science Olympiad Structure Tester 71
Simple Circuit Board 60
Straw Rocket Launcher 78
Timber Cutter 71
Timber Tester 72
Tool Set, Pitsco 39
Wind Generator 55

Kits & Paks

Balloon Car Explore-A-Pak 44
Blinky Robot Kit 60
Boat Hull Design Kit 85
Bottle Rocket Smorgasbord 75
BridgePak, Balsa 70
BridgePak, Basswood 70
ChallengePak Power Pak 38
Da Camera Expendables Pak 62
Da Camera Pak 62
Dr. Zoon KaZoon Kite Kit 82
Fold-N-Roll Racer Kit 46
Hartman Racer Explore-A-Pak 46
Hot Air Balloon Explore-A-Pak 80
Invention Explore-A-Pak 40
Kaleidoscope Kit 62
Kite Explore-A-Pak 82
Laser Diode Kit 63
Laser Light Kit 63
Measuring Fractions Explore-A-Pak . . 40
Mousetrap Car Kit 42
Mousetrap Car Packs 42
Mousetrap Vehicle Demo Kit 43
R2K Bottle Rocket Classroom Pak 75
R2K Bottle Rocket Kit 75
Raven Kit 83
Raven Pack 83
Raven Teacher Demo Kit 83
Ray Catcher Deluxe Power Pak 53
Ray Catcher Power Pak 53
Ray Catcher Sprint Deluxe Kit 52
Ray Catcher Sprint Kit 52
SolarPak Power Pak 54
Stratoblaster Kit 75
TowerPak, Balsa 72
TowerPak, Basswood 72

Supplies

Blue Glue 101
Blue Roadster Fold-N-Roll Templates . . 46
Bronze Bridge Building Medal 73
Chevy Template 44
Dodge Template 44
Ford Template 44
Formula 1 Fold-N-Roll Templates 46
Tank Template 44
Flags & Flames Decals 45
Gear Pkg A (Combo) 39
Gear Pkg B (Combo) 39
Gear Pkg C (Combo) 39
Gear Pkg D (Combo) 39
Gear Pkg-Pinion 39
Gear Pkg-Bevel, Worm, Rack 39
Gold Bridge Building Medal 73
Gore Pattern Template 81
Green Glue 101
GT-F Racer Wheel 98

Pitsco Products (cont.)

Supplies (cont.)

GT-R Racer Wheel . . . 98
HD Bond Glue, 2 oz . . . 101
Lever Arm . . . 42
Neat Stuff Decals . . . 45
Numerals Decals . . . 45
Pink Glue . . . 101
Pinstripes (Decals) . . . 45
Plane Art (Decals) . . . 45
Plastic Gear Font . . . 39, 54
Quarter Pounder Fold-N-Roll Templates . . . 46
Ray Catcher Solar Panel . . . 53
Red Roadster Fold-N-Roll Templates . . . 46
Red/Yellow Dagger Fold-N-Roll Templates . . . 46
Silver Bridge Building Medal . . . 73
Solar Wheels with O-Rings . . . 53
Structures Certificates . . . 73
Timber Cutter Blades . . . 71

Posters

Aerospace

Balloons In Flight Mural . . . 81
Big Rocket Ship Bulletin Board Set . . . 79
Mars: A Panoramic Vista . . . 17
Shuttle In Orbit Mural . . . 77
Space Rockets . . . 78

Careers

Careers In Robots . . . 21
Lasers: Career Opportunity . . . 63
Only Part Missing Is You . . . 21
Problem-Solving Poster . . . 36

Lasers

History Of The Laser . . . 63
How Does A Laser Work? . . . 63
Laser Poster Set . . . 63
Lasers: Career Opportunity . . . 63
Learn Laser Safety . . . 63
Uses Of Laser Are Around Us . . . 63

Machines

Inclined Plane . . . 37
Lever . . . 31, 37
Pulley . . . 31, 37
Screw . . . 37
Wedge . . . 37
Wheel . . . 29, 37

Robots

Careers In Robotics . . . 21
Robotics Poster Set . . . 21
Why Do We Use Robots? . . . 21

Software

CD-ROMs

Car Builder . . . 47
Car Builder, CD-ROM Lab Pack . . . 47
Car Builder, CD-ROM School Pack . . . 47
Electricity & Magnetism CD-ROM . . . 59
Fun With Architecture CD-ROM . . . 69
Gizmos & Gadgets CD-ROM . . . 38
HardHat CD-ROM . . . 92
How Things Work CD-ROM . . . 87, 92
LEGO Designer CD-ROM . . . 34
LEGO Designer Software Site License . . . 34
LEGO Studios Camera and Software . . . 35
Mars: Past, Present, Future (Mac/Win) . . . 17
ROBOLAB Intelligent House Conversion Pack . . . 11
ROBOLAB Investigator Add-On . . . 12, 15
ROBOLAB Investigator Site License . . . 12
ROBOLAB Investigator Software . . . 12
ROBOLAB Programmer CD & User's Guide . . . 15
ROBOLAB Programmer Site License . . . 15
ROBOLAB Programmer Software . . . 15
Simple Machines CD-ROM . . . 36
Solar System CD-ROM . . . 79
Way Things Work 2.0 CD-ROM . . . 36

Apple II

Car Builder . . . 47
Car Builder Lab Pack . . . 47

Macintosh

Car Builder . . . 47
Car Builder, CD-ROM Lab Pack . . . 47
Car Builder, CD-ROM School Pack . . . 47
Control Lab Software Mac . . . 19
Control Lab Starter Pack Mac . . . 18
Electricity & Magnetism CD-ROM . . . 59
Gizmos & Gadgets CD-ROM . . . 38
HardHat CD-ROM . . . 92
How Things Work CD-ROM . . . 87, 92
Mars: Past, Present, Future (Mac/Win) . . . 17
ModelSmart . . . 73
ModelSmart Lab Pack . . . 73
ModelSmart Net Pack . . . 73
ModelSmart School Pack . . . 73
Oslo Tools & Gadgets CD-ROM . . . 27, 31
RCX Brick . . . 14
ROBOLAB Investigator Add-On . . . 12, 15
ROBOLAB Investigator Site License . . . 12
ROBOLAB Investigator Software . . . 12
ROBOLAB Programmer CD & User's Guide . . . 15
ROBOLAB Programmer Site License . . . 15
ROBOLAB Programmer Software . . . 15
Simple Machines CD-ROM . . . 36
Solar System CD-ROM . . . 79
Way Things Work 2.0 CD-ROM . . . 36

DOS

Car Builder . . . 47
Car Builder Lab Pack . . . 47
Control Lab Software DOS . . . 19
Control Lab Starter Pack Win/DOS . . . 18
Rocketry Stability Program . . . 77

Windows

Car Builder . . . 47
Car Builder, CD-ROM Lab Pack . . . 47
Car Builder, CD-ROM School Pack . . . 47
Edison AC/DC (Ver. 3.0) . . . 61
Edison DC . . . 61
Edison Electronics (Ver. 2.0) . . . 61
Electricity & Magnetism CD-ROM . . . 59
Gizmos & Gadgets CD-ROM . . . 38
How Things Work CD-ROM . . . 87, 92
Invention Studio CD-ROM . . . 37
Magic School Bus CD-ROM . . . 89
Mars: Past, Present, Future (Mac/Win) . . . 17
ModelSmart . . . 73
ModelSmart Lab Pack . . . 73
ModelSmart Net Pack . . . 73
ModelSmart School Pack . . . 73
Oslo Tools & Gadgets CD-ROM . . . 27, 31
RCX Brick . . . 14
ROBOLAB Investigator Add-On . . . 12, 15
ROBOLAB Investigator Site License . . . 12
ROBOLAB Investigator Software . . . 12
ROBOLAB Programmer CD & User's Guide . . . 15
ROBOLAB Programmer Site License . . . 15
ROBOLAB Programmer Software . . . 15
Simple Machines CD-ROM . . . 36
Solar System CD-ROM . . . 79
Way Things Work 2.0 CD-ROM . . . 36

Spanish

Gears Teacher Guide – Spanish . . . 29
Levers Teacher Guide – Spanish . . . 30
Pneumatics Teacher Guide – Spanish . . . 57
Pulleys Teacher Guide – Spanish . . . 31
ROBOLAB Activity Pack – Spanish . . . 5
ROBOLAB Getting Started Teacher's Guide – Spanish . . . 12, 15
ROBOLAB Programmer Site License – Spanish . . . 15
ROBOLAB Programmer Software – Spanish . . . 15
Simple Machines Activity Pack – Spanish . . . 27
Wheels & Axles Teacher Guide – Spanish . . . 28

Spare Parts

AC Adapter . . . 14
Angle Sensor . . . 14, 19, 108
AquaPort Manifold Accessory . . . 74
Axle, 3-Stud . . . 106
Axle, 4-Stud . . . 106
Axle, 6-Stud . . . 106
Axles for ESM . . . 109
Band, Blue . . . 107
Band, Large White . . . 107
Band, Small White . . . 107
Band, Yellow . . . 107
Baseplates, Large LEGO System . . . 103
Baseplates, Small LEGO System . . . 103
Battery Box w/Switch 9V . . . 108
Beam, 1 x 2 Red . . . 106
Beams, Blue . . . 110
Beams, Red . . . 110
Belts for ESM . . . 110
Blue Roadster Fold-N-Roll Templates . . . 46
Brick Runner, DUPLO BASIC . . . 92
Brick Separator . . . 108
Brick, 1 x 2 Red . . . 106
Bushing, Gray . . . 106
Cams & Linkages . . . 108
Capacitor . . . 51
Chain Links, Small . . . 110
Chevy Template . . . 44
Connecting Leads . . . 108
Connector Peg, 1-1/2 Dark Gray . . . 107
Connector Peg, Black . . . 107
Connector Peg, Gray . . . 107
Connectors & Bushings . . . 108
Conveyor Belt Links . . . 110
Differentials . . . 108
Dodge Template . . . 44
Doors & Windows, Large LEGO System . . . 102
Ford Template . . . 44
Formula 1 Fold-N-Roll Templates . . . 46
Gear, 8-Tooth . . . 107
Gear, 14-Bevel . . . 107
Gear Block, Yellow . . . 108
Gear Pkg A (Combo) . . . 39
Gear Pkg B (Combo) . . . 39
Gear Pkg C (Combo) . . . 39
Gear Pkg D (Combo) . . . 39
Gear Pkg-Bevel, Worm, Rack . . . 39
Gear Pkg-Pinion . . . 39
Gear Racks, Worm Gears . . . 110
Gear Wheels, Large . . . 110
Gear Wheels, Small . . . 110
Gears for ESM . . . 110
Gore Pattern Template . . . 81
GT-F Racer Wheel . . . 98
GT-R Racer Wheel . . . 98
Hubs & Tires . . . 110
Infrared Transmitter & Cable . . . 14
Interface Cable, Apple/Mac . . . 19
Interface Cable, IBM/PC . . . 19
Just Bricks, LEGO BASIC . . . 103
Laminated Table Cover, Large . . . 86
Lamp, 9V . . . 14, 107
Lamps & Fittings . . . 108
Lever Arm . . . 42
Light Sensor 9V . . . 14, 19, 108

Spare Parts (cont.)
Medium Bulk, DUPLO BASIC 104
Micromotor 9V 14, 108
Motor 280 54
Motor 385 54
Motor 500 54
Motor w/Gear Reduction 14, 108
Motor, 9V 108
O-ring Tire 106
Plastic Gear Font 39, 54
Plate, LEGO DUPLO Building 104
Plates, 1 x 2 Blue. 106
Plates, Black 109
Plates, Blue 109
Plates, Electric. 108
Plates, Green Building 109
Plates, LEGO DUPLO White (4) 104
Plates, Red 109
Plates, Yellow 109
Pneumatic Circuit. 110
Pulley Wheel, Medium 106
Pulley Wheel, Small 107
Pulleys, Assorted 110
Pump & Cylinder, Small Pneumatic . . 110
Quarter Pounder Fold-N-Roll Templates 46
Red Roadster Fold-N-Roll Templates . . 46
Red/Yellow Dagger Fold-N-Roll Templates 46
Roadplates 103
Roof Tiles, LEGO System. 102
Rover Tire 106
Rubber Bands & String 110
Sensor Adapter, DCP 13
Short Axles & Extenders 109
Simple Machines, Motorized 26
Small Pulleys & Handle ESM 110
Solar Add-On 27
Solar Battery 47
Sound Element 9V 108
Special Elements for 779633 109
Special Elements for 979630 109
Special Elements for 979701 109
Special Elements Mini Set 109
Speed Computer 27
Storage Bin, Large Red 93
Storage Bin, Medium Green 93
Storage Bin, Small Red 93
Storage Bin, X-Large Yellow 84, 93
Storage Bin, X-Small Yellow 93
Tank Template 44
Temperature Sensor 14, 108
Touch Sensor And Leads 14, 108
Turntables, Technic. 110
Weight Elements. 110
Wheel Hub, Small Gray. 106
Wheels, LEGO System 107

Supplies
Acrylic Paint, 18 Pack 98
Alligator Clips, #34 52
Art Straws, 4 mm 98, 100
Astronaut Breakfast 77
Astronaut Cheese Pizza. 77
Astronaut Chicken Dinner 77
Astronaut French Fries 77
Astronaut Ice Cream 77
Astronaut Ice Cream Sandwich 77
Balloons, 2" x 60" 100
Balloons, 9" 100
Balloons, 11" 100
Balsa Wood 73
Basswood 101
Bevel Washers. 42
Blue Glue 101
Blue Vinyl Tape 100
Blunt End Structure Sticks. 67
Bronze Bridge Building Medal 73
Card Wheel Pack 44, 101
CD Wheels 42
Clear Straws 65, 78, 100
Coffee Stir Sticks, Wooden. 101
Craft Sticks, Colored 101
Craft Sticks, Jumbo 101
Craft Sticks, Notched 101
Da Camera Expendables Pak 62
Double-stick Tape. 57, 100
Dowels 101
Fishline, 20# 101
Flags & Flames Decals 45
Glue Bottles w/Lids, 2 oz 101
Gold Bridge Building Medal. 73
Green Glue 101
Green Vinyl Tape 100
HD Bond Glue, 2 oz. 101
Hook-and-Loop Fastener. 100
Kite String, 30#. 100
Leads, Assorted Colors 99
Light Twine. 100
Lite Flite Wheels. 98
Low-Melt Glue Slugs 77
Masking Tape 100
Motor 280, 385, 500 54
Mousetrap T-Shirt 43
Mousetraps 42
Neat Stuff Decals 45
Numerals Decals 45
Paper Brads. 100
Paper-Covered Styrofoam 70
Pink Glue 101
Pinstripes (Decals) 45
Pipe Cleaners 100
Plane Art Decals. 45
Plastic Wheels, 2-1/2" 42
Poster Tack 78
Propane Cylinder. 80
Rechargeable Batteries. 99
Red Vinyl Tape 100
Rubber Band Variety Pack. 101
Rubber Bands, Wide. 53, 101
Silver Bridge Building Medal 73
Solar Wheels With O-Rings. 53
Solder 60
Spiderwire 98
Sponge Balls 100
Straws, 1/8" 65, 100
Straws, Long 65, 100
Straws, Neon Blue 65, 100
Straws, White & Red Stripe . . . 65, 78, 100
Structures Certificates 73
Syringe Mounting Clip 57
Syringes. 57
Timber Cutter Blade. 71
Toothpicks, Colored 67
Toothpicks, Large. 67
Toothpicks, Round 67
Toothpicks, Square. 67
Tubing, 1/8" 57
Waxed Paper. 70
Wheels, Lite Flight 98
Wire, 22-Gauge Red 99
Yellow Vinyl Tape 100

Tools
A.T.A.K. (AquaTrak Accessory Kit) . . . 85
Art Brush Assortment 98
Bench Clamp Base Mount 85
Circle Perfect Compass 97
Compass 97
Geometry Set 97
Gloves 99
Hull Designer Tool Set. 85
Low-Melt Glue Gun. 77
Mini Goggles 99
Panavise 85
Protractor, 180°/6" 97
Rulers 97
Safe-T Compass 97
Scale, Pro Ruler Metric 97
Tool Set, Pitsco 39
Tubing Cutter 42
Wire, 22-Gauge Red 99

Videos
Bottle Rocket Video 75
Bridges 68
Building A Rover 17
Building Skyscrapers 68
Children & Math 68
Discovering Fluid Power. 57
Domed Stadiums 68
Dr. Zoon Bridge Building Video 71
Dr. Zoon Fold-N-Roll Video 46
Dr. Zoon KaZoon Kite Video 82
Dr. Zoon Learning to Solder Video. . . . 60
Dr. Zoon Mousetrap Vehicle Video. . . . 43
Dr. Zoon Raven Video 83
Dr. Zoon Ray Catcher Vehicle Video . . 53
Dr. Zoon Solar Designers Video 54
Dr. Zoon Stratoblaster Video. 75
Dr. Zoon Straw Structures Video 65
Dr. Zoon Toothpick Bridges Video 67
Dr. Zoon Tower Building Video 73
Earth's Moon 76
Edison Effect Video Series. 41
Eiffel Tower. 68
Empire State Building 68
Equilibrium & Materials 68
Gothic Cathedrals 68
Grand Coulee Dam 68
History Of Architecture Engineering . . 68
Hot Air Balloon Design & Make. 81
Jupiter 76
Let's Go Flying, Kids! 88
Loads On Buildings 68
Mars 76
Mars: Past, Present, Future 17
Mercury. 76
Mount Rushmore 68
Neptune 76
Ocean Liners. 68
Panama Canal. 68
Paper Structures 68
Pluto 76
Rocket Men. 79
Saturn 76
Scientific Method 36
Simple Machine and Work Series 37
Skyscrapers. 68
Solar Energy 53, 55
Space Explorers Package 76
Statue Of Liberty 68
Swing Bridges. 68
Transcontinental Railroad 68
Tunnels 68
Up With Balloons 81
Uranus. 76
Venus. 76

Spectrum System™

"Our [Spectrum System] lab has really made a difference in our school. This lab has made it possible for students to become more independent, responsible, and to understand what it means to work as a group. It is so gratifying to see them pull together and discuss, then agree on a solution."

Beth Stafford, Teacher (Grades 3-5)
Marian Academy Catholic School, Okmulgee, OK

SPECTRUM
SYSTEM

A Hands-on Science Solution for Grades K-6

from Pitsco LEGO Dacta®

Spectrum System from Pitsco LEGO Dacta

Spectrum System is a hands-on science curriculum for Grades K-6. Exploration occurs cooperatively within groups of four students at Grades K through 4. In the 5th and 6th grades, students can work in groups of either four (a Crew) or two (a Team) depending on how a teacher implements the system.

Flexible System, Hands-on Curriculum

The Spectrum System combines science topics with teamwork, problem solving, and a hands-on curriculum. And by integrating math, technology, communication, and language arts, the system becomes flexible enough to accommodate many different applications.

A Partnership with You in Mind

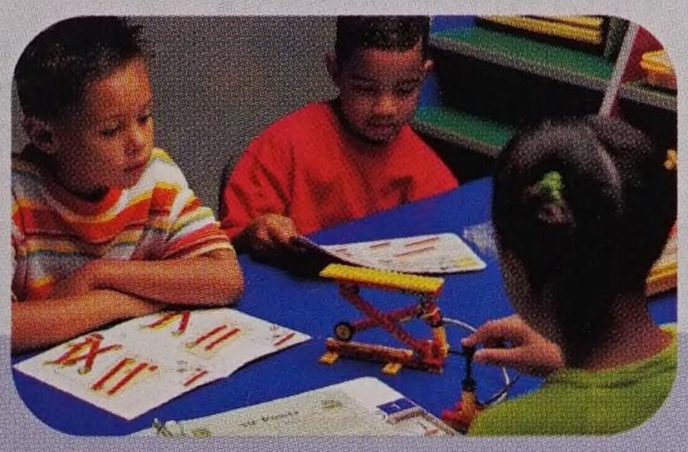
Two of the leading innovators in the education field, Pitsco and LEGO Dacta, have joined forces to provide hands-on science, math, and technology curriculum-based solutions for elementary students and teachers. These products, curriculum, and activities engage and motivate students while meeting educational content standards.

Meeting and Exceeding Standards

Every one of our 72 Missions correlates with state and national standards. Spectrum System continuously correlates our curriculum with Amalgama™, Pitsco's proprietary, comprehensive standards database, to help you and your students meet these goals.

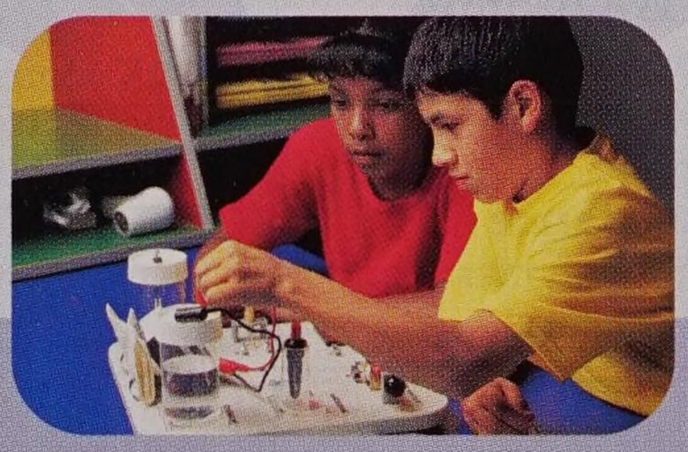
Cooperative Learning

When students work together, they don't just learn what's on the lesson plan. Teamwork, communication, and leadership skills can develop within all activities.



Constructing Knowledge

Spectrum students learn by constructing knowledge from many different experiences, including teamwork, hands-on activities, problem solving, and inquiry-based discovery.



Professional Development

Spectrum offers professional development, which includes a system specialist delivering six hours of on-site orientation to prepare you to coordinate, manage, and teach the Spectrum System.

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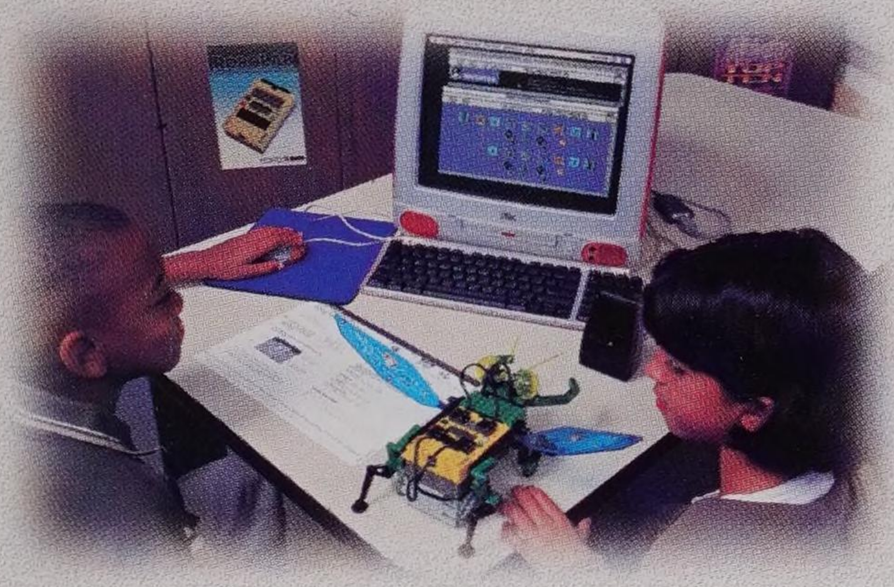

. . . all students have the desire to learn. We must deepen that desire by giving them the opportunity and tools they need to succeed. Students are our future.

*. . . **teachers** who use hands-on, minds-on activities create opportunities for student success. We at Pitsco LEGO Dacta build relationships with our teacher friends and aim to help them succeed.*

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*. . . **solutions** come in the form of systems, kits, well-focused curriculum, and other hands-on, minds-on products. This catalog includes hundreds of activities to engage K-12 students. The Spectrum System curriculum overview is included on pages 124-125 as a new method for today's students and teachers.*

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